The RUBBER AGE

VOL. 30, NO. 12 MARCH 25, 1932

LATE NEWS of the Industry

British and Dutch Governments Fail to Reach Accord on Restriction—

News of Failure of Negotiations Carries Rubber to Three Cent Level on Exchange—But Situation May Improve With the Dissipation of Uncertainty

ALL uncertainty regarding future restriction plans was dissipated on March 19, with the joint announcement from the representatives of the British and Dutch governments, meeting in London, that all negotiations leading to the formulation of a restriction scheme had broken down and that no further parleys would be held. The matter was made all the more definitely clear by later press dispatches from London quoting the British authorities as stating that no further negotiations will be held "either now or in the future."

The news caused considerable disturbance in the main rubber trading centers and forced the commodity down to 3.01 cents per pound on the New York Rubber Exchange, on the next trading day, March 21.

The selling, emanating from trade and commission house quarters, was believed to have represented for the most part liquidation of some long held speculative lines. A firmer tone developed later, and the March delivery sold up to 3.08 cents during the noon hour. The action of the futures market for rubber following the adverse restriction decision indicated to traders that this development had been well discounted.

It was recalled that when the British government announced the abandonment of the Stevenson restriction plan in the spring of 1928, rubber values engaged in a precipitate fall of about seven cents.

The London market declined to a new low of 1 7/8 pence, but also firmed up slightly before the close. Cables stated that the market there naturally was unsettled by the dissipation of restriction hopes, but it was generally felt in the trade there that a healthier position for the commodity will eventually develop, if for no other reason than uncertainty has been removed.

The official statement of the British and Dutch representatives, issued simultaneously in London and The Hague, was as follows:

"The British and Netherlands governments, in association with representatives of the rubber growers in the British and Dutch overseas territories, have been engaged in negotiations in order to see whether a practical scheme for the improvement of the rubber situation can be devised.

"In the course of these negotiations the British and Netherlands governments have consulted Ceylon, Malaya and the Dutch East Indies.

"After a careful review of the situation the British and Dutch governments have been forced to the conclusion that under present conditions it is impossible to frame and operate an international scheme which would guarantee effective regulation of the production and export of rubber."

Scanning the Headlines

RESTRICTION *becomes a dead issue after all negotiations between British and Dutch fail . . . .* CONSUMPTION *of rubber in U. S. rose 7.3 per cent in February . . . . Tire shipment show gain and production climbs in January figures . . .* FISK *reorganization plan still meets heavy opposition . . . Akron, Chicago and Boston Rubber Groups hold meetings . . . . Independent Tire dealers win victory over chain stores in price discount war . . . . . .* MOHAWK, INTERNATIONAL *and* SERVUS *issue annual statements . . . . Sales tax opposed by Rubber Manufacturers' Association . . . . France raises tariff against rubber goods . . . .* GOODRICH *experts test tire noises.*

Independent Dealers Claim Victory Over Manufacturers in Tire Price War

SEVERAL of the larger automobile tire manufacturers have discontinued the preferential discounts which recently were extended to some of the larger oil companies under which the latter were enabled to buy tires either at or below the cost of production, as the result of the storm of protest from the independent tire dealers of the country, according to F. A. Seiberling, head of the company which bears his name.

"The initial skirmish," said Mr. Seiberling, who has led the protests, "has been won by the independent dealers. For the first time in years the united action of the retailers has worried the large manufacturers into action. This proves that the tire industry can be restored to the profitable policies which once prevailed if only the independent retailers will maintain a united front and resist with real vigor and enthusiasm every move on the part of the manufacturers which deprives them of their legitimate business—the tire replacement business.

"Since this most recent discriminatory action on the part of the manufacturers was announced, dealers in all sections of the country have held mass meetings, letters of protest have flooded the manufacturers and the resentment of years' standing at last has crystallized into definite action seeking the restoration of sound trade practices and the recognition of the retailer as the bulwark of the tire business.

"The tire business has been operated insanely for too long a period," said Mr. Seiberling. "Volume has been the sole thought of manufacturers. Dealers have been ignored. Conditions have become so demoralized that hundreds of independent merchants, who should be earning fair profits on their investments, are barely struggling along. One foolish practice has followed another until today the country's fourth largest manufacturing industry is in a state of chaos. Instead of tires being sold through legitimate retailers with profit to manufacturer, distributor and retailer and fair value to the consumer, sales are made through a dozen different agencies, discriminating discounts are given to large users, predatory price cutting is widespread and the business as a whole is run ruthlessly along unsound economic lines which presage eventual financial disaster."

Akron Rubber Group, A. C. S., Holds March Meeting and Elects Officers

THE March meeting of the Akron Rubber Group was held at the Akron City Club, March 7, and was attended by approximately 200 members. Dinner, the election of new officers and papers on three subjects made up the evening's program.

Harry J. Conroy of the General Tire and Rubber Company was elected chairman of the group for the coming year; H. A. Bourne of the B. F. Goodrich Company was elected vice-chairman; E. H. Baker of the Binney & Smith Company, was elected secretary, and V. L. Smithers of the V. L. Smithers Company, engineers, was elected chairman of the publicity committee, with Bert S. Taylor of the B. F. Goodrich Company, as music chairman.

Messrs. G. F. A. Stutz, George Haslam and B. R. Silver of the New Jersey Zinc Company, presented an extremely interesting paper on some of the possibilities in manufacturing oxides having various characteristics in order to meet specific requirements. It was pointed out that particle size had a very marked effect on reinforcing properties and that a surface treatment of the oxides aided materially in incorporation without detrimental effects. The paper was illustrated with photomicrographs and curves of experimental work and a moving picture film of the facilities at the Palmerton Laboratories was shown.

J. W. Ayers, director of research for the C. K. Williams Company, presented some extremely interesting information on oxides for rubber colors. Mr. Ayers explained some of the difficulties in trying to transmit a description of colors and showed some curves made by a commercial color analyzer which was developed with a view to describing a color without having a sample present. Lantern slides were shown to describe the process and equipment used in the manufacture of oxides and numerous rubber samples were presented to indicate the differences in coloring values of various materials.

A. J. Musselman entitled his talk, "The Experiences of An Inventor." He told of some of the developments in racing bicycle tires and described the experimental work done to develop a tire of minimum resistance. He further described some interesting tests and presented some data on the more recent development of the doughnut tire.

Tire Shipments Increase 17 Per Cent And Production Also Shows Gain

SHIPMENTS of pneumatic casings for the month of January amounted to 3,253,086 casings, an increase of 17.0 per cent over December, but were 13.1 per cent below January, 1931, according to statistics released by The Rubber Manufacturers Association, Inc., today.

Production of pneumatic casings for January was reported to be 3,462,485 units, an increase of 31.0 per cent as compared with December, 1931, but were 5.8 per cent below January a year ago.

Pneumatic casings on hand January 31st amounted to 7,911,771 units, an increase of 1.8 per cent over December, although 11.7 per cent below January 31, 1931.

The actual comparative figures are as follows:

Pneumatic Casings

	Shipments	*Production*	*Inventory*
January, 1932	3,253,086	3,462,485	7,911,771
December, 1931	2,781,295	2,643,221	7,774,720
January, 1931	3,744,349	3,674,628	8,957,308

February Rubber Consumption Shows 7.3% Gain Over Seasonal Trend

CONSUMPTION of crude rubber by manufacturers in the United States for the month of February amounted to 30,011 long tons as compared with 27,962 long tons for January, 1932, and represents an increase of 7.3 per cent which is contrary to the usual seasonal decline of 3.5 per cent, according to statistics released by The Rubber Manufacturers Association. Consumption for February a year ago was 28,797 long tons.

Imports of crude rubber for the month of February is reported to be 30,546 long tons, a decrease of 2.4 per cent under the January figure and 16.6 per cent below February a year ago.

Estimates of total domestic stocks of crude rubber on hand February 29 is set at 322,117 long tons, which compares with January 31 stocks of 322,860. While February stocks show little change as compared with January, they were 51.3 per cent above stocks the same date last year.

A total of 51,728 long tons of crude rubber were reported afloat for the United States ports on February 29th which compares with a revised figure of 42,234 long tons afloat on January 31, 1932.

Boston Rubber Group to Hold Dinner and Meeting April 7

THE Boston Group of the Rubber Division, A. C. S., will hold its first meeting for the year at the Hotel Continental in Cambridge, Mass., on April 7.

The dinner, at 6:15 P. M., will be followed by a special program including remarks by executives well known in the industry.

The scheduled papers to be delivered include:

1. "Some Effects of Heat in the Vulcanization of Rubber" by Dr. Warren K. Lewis of the Massachusetts Institute of Technology. Dr. Lewis will present the latest concepts of this phase of the vulcanization reaction.
2. "The Romance of News Gathering" by Alton Hall Blackington whose ability as a news getter is widely known and who will demonstrate with his movie projectors just what is involved in putting the pictorial news promptly on Page 1.

To secure reservations, checks may be sent to T. M. Knowland, secretary, Boston Woven Hose & Rubber Company, Cambridge, Mass. Tickets will be $1.75 each.

Fisk Reorganization Plans Still Meeting With Opposition

EARLY acceptance of the Fisk Rubber Company reorganization plan by note and bondholders would be to their direct financial interest as the best means of protecting their investment, according to Richard H. Swartwout, selected by the reorganization committee to act as chairman of the new company when reorganized.

In addition, prompt reorganization would eliminate the trade difficulties resulting from receivership operation and would insure continued employment for those now on the company's payrolls as well as probably permitting an increase in number of employes, Mr. Swartwout stated.

At the present time, holders of over 40% of the 8% first mortgage bonds and of more than 47% of the 5½% debenture notes have deposited their securities under the reorganization plan.

Interests favoring acceptance of the plan stress three main points in the current Fisk situation: First, that liquidation under present unfavorable business conditions would realize at best only a small part of present asset values and would bring only a negligible return for note and bond holders; second, that if liquidation is to be avoided a prompt reorganization is essential in order to avoid further weakening of the company's position through the unfavorable trade effects of receivership operations as well as through possible resultant losses from operations, and, third, that a stock reorganization with elimination of funded obligations and heavy plant investment is a prime requisite for satisfactory operations in the future in order to reduce materially the heavy fixed charges which were largely responsible for the losses incurred by the company in the past.

At the same time the opposition is making a strong fight. John N. Willys is not opposed to reorganizing the Fisk Rubber Company, but favors such procedure, according to W. B. Stratton, who represents Mr. Willys in his opposition to the recently promulgated reorganization plan.

"He is, however, opposed to the plan recently put forth," said Mr. Stratton, "Liquidation is neither necessary nor desirable.

"The proposed plan offers no inducements. No new money is underwritten. The bondholders and noteholders are changed from creditors to stockholders with no protection against being put behind bonds and notes that may thereafter be given for needed new capital. The proposed new management has concededly no training in the highly competitive tire industry, nor with respect to rubber, cotton or cotton fabric. Nor from what has been shown, has the suggested new president any experience with a large successful continuing enterprise."

In the meantime the reorganization committee has announced that the time limit for depositing bonds, notes and claims and for exercising subscription rights under the reorganization plan, has been extended to April 1.

In connection with complaints by opponents of the plan that the heads of the proposed new management have had no experience in the rubber business, supporters of the plan state that the present organization of the company is familiar with and skilled in the technical and trade problems of the industry and that Mr. Swartwout and Edward D. Levy, selected as president, have in the past demonstrated the executive ability required to reestablish the company's operations on a satisfactory basis.

Sir Dennis Burney Predicts Changes in Auto Car Design

AMERICAN cars will undergo a marked change in appearance and some radical revisions in fundamental design, according to Sir Dennis Burney, British automotive engineer and designer of the R-100, who is in this country attending the automotive shows and speaking before automotive engineering groups.

Sir Dennis, whose paper before the Society of Automotive Engineers was entitled "Automobile Designs Revolutionized," attacks the present type of car from two standpoints: first, on its weight distribution and, second, on its wind resistance which he states is out of all proportion and is responsible for wasting a tremendous amount of horsepower at present driving speeds.

Commenting on the cars at the recent automobile shows, Sir Dennis has the folowing to say:"You have made tremendous strides in America from a mechanical engineering standpoint. When it comes to streamlining, however, although this has been spoken of for years in your advertising and by your salesman, very little of it is to be found. Perhaps this was not so important until recently but now that modern road conditions permit speeds of 60 miles an hour engine at that speed is used in overcoming air-resistance, the and more with safety, and when it is remembered that no more than 75 per cent of the power given off by the importance of streamlining may be realized.

"To my mind your recent automobile shows indicated a notable step in advance, particularly as regards appearance and increased power but it is nothing to what may be expected in the immediate future. From the standpoint of body design and outline it appears to me that several car makes are going in the right direction in design, in departing particularly from angular surfaces and really beginning to approach a streamline exterior. The elimination of the peak over the windshield and applying in its place a smooth, curved surface, is indicative of the proper trend."

Sir Dennis further commented that he believes the American engineers as well as the public, are now in a mood to accept radical departures in design where such a thing would have been impossible during the period of rush production and heavy sales. The need for stirring public interest and particularly the need for rendering older models obsolete makes it possible to incorporate advance ideas in our new designs. Sir Dennis exhibiting on his tour a sedan of his own streamline design with engine mounted in the rear. This car has created considerable stir in Europe, one of them being at present driven by the Prince of Wales.

Servus Rubber Company Makes Profit But Reserves Cause $11,824 Loss

DUE to a series of drastic reductions made in sales prices of waterproof and canvas footwear by the larger companies during 1931, which reductions had to be met to be competitive, the operating profit of the Servus Rubber Company, Rock Island, Ill. was seriously affected.

The company made an operating profit for the year 1931 of $86,955.85. However, after setting up reserves for bad debts, freight and amortization, interest charges on borrowed money and depreciations on building, machinery and equipment, the net result was a loss of $11,824.04.

There were no write-offs or reserves set up for inventories as both raw materials and finished goods were at or below prevailing market values and cost estimates. During the year the company operated continuously on a six day schedule, giving employment to some nine hundred persons.

Manufacturing costs were reduced during 1931 by about 33⅓ per cent. This reduction was made possible by reason of the new methods of manufacture and the low costs of raw material.

Below we give comparison of production of pairs and average cost of production per pair:

	1931	1930	1929
Pairs produced	3,678,096½	2,530,230	2,812,293½
Average cost per pair	$0.4262	$0.6246	$0.6349

Comparison of the cost of goods sold and net sales value for 1931 and 1930 are given below:

	December 31 1931	December 31 1930
Pairs sold	3,767,602½	2,345,406½
Net sales value	$1,985,655.15	$1,959,740.47
Net sales value per pair	$0.5270	$0.8356
Cost of sales	$1,626,768.42	$1,501,043.19

Summary of Net Income

	1931	1930
Gross sales	$2,768,932.76	$2,770,958.33
Less returns, allowances, rebates, trade and special discounts, outbound freight and freight on returns, including provision for freight not yet allowed of $15,000 for 1931 and $11,754.03 for 1930	783,277.61	811,217.86
Net sales	$1,985,655.15	$1,959,740.47
Cost of goods sold	1,626,768.42	1,501,043.19
Gross profit from sales	$358,886.73	$458,697.28
Selling and administrative expenses	271,930.88	236,483.90
Profit from operations	$86,955.85	$222,213.38
Other Income Credits:		
Cash discounts on purchases	$6,567.34	$7,470.97
Interest earned:		
Notes and accounts receivable	361.37	4,074.64
Income tax refund	.....	7,769.09
Sale of scrap, etc.	268.00	325.94
Adjustment of royalties paid	650.91	767.56
Miscellaneous	337.66	390.12
Total	$8,185.28	$20,798.32
Gross income	$95,141.13	$243,011.70
Income Charges:		
Cash discounts on sales	$26,642.04	$40,093.03
Interest on notes and accounts payable	49,420.61	52,757.23
Loss on disposal of capital assets	38.11	17,275.33
Provision for Federal income tax	104.40	11,654.19
Provision for doubtful accounts, less recoveries	22,075.85	42,343.67
Life insurance premiums—Net	4,726.72	5,075.84
Total	$103,007.73	$169,199.29
Net income for the year	*$7,866.60	$73,812.41

*Loss.

Chicago Rubber Group Holds Interesting Meeting and Dinner

THE Chicago Rubber Group, A. C. S., met in the College Inn of the Hotel Sherman, Chicago, Ill., on the evening of March 18. Ben Bernie, with his complete orchestra and stage show, furnished the entertainment. The meeting and dinner were especially well attended.

Noah VanCleef, member of the firm of VanCleef Bros., gave a paper on 'The Source of the Rubber Hydrocarbon.' Motion picture films, which were taken on Mr. VanCleef's recent trip to the plantations of the Far East, were also enjoyed by the gathering. He also showed some interesting views of gold and diamond mining.

Rubber Scrap Dealers Hold Annual Convention and Banquet

THE nineteenth annual convention of the National Association of Waste Materials Dealers was held at the Hotel Astor, New York City, March 14-16, ending in the usual annual banquet. The dinner was attended by over 275 members and guests. The chief speakers of the banquet included Charles Schwab, chairman of the board of directors of the Bethlehem Steel Company and General Smedley D. Butler.

At the business session of the Scrap Rubber Section, held in the morning of March 16, a revision of scrap classifications was discussed and a committee appointed to cooperate with the Rubber Manufacturers Association along these lines. Resolutions advocating the reduction in railway tariffs on scrap were also adopted.

Turkish Tire Trade

THE trade in tires in Turkey declined steadily during 1931, according to the reports of the Department of Commerce. This was due to several adverse developments, including a poor export season, with a consequent reduction in purchasing power and the establishment of import quotas, with a view to equalizing the trade balance and protecting the stability of the Turkish pound. The application of the import quota system has had a generally adverse effect on all products, including tires. Under this system the quantity to be admitted monthly is made known 20 days in advance; the quota for the first quarter of 1932, however, has already appeared, but the quotas will be on a monthly basis thereafter.

The present import quota restrictions affect most distributors of American tires much more seriously than European distributors. Michelin tires are imported and distributed by the local Michelin factory branch. Dunlop, Continental, Pirelli, and Englebert tires are supplied by the respective factories on a consignment basis, and in some instances are sold for the above factories' own account, while local distributors of American tires order stocks on their own account and accept drafts at set maturities. Under the present system they must face the possibility of being obliged to pay drafts covering certain portions of shipments which they can not even clear from the customs.

European tire manufacturers and their local distributors continued their policy of liberal open consignments to subdealers.

American tire sales during the last quarter of 1931 are estimated to have been about 50 per cent below those of the corresponding period of 1930, but are believed to have controlled about 40 per cent to 45 per cent of total tire sales. Total tire sales of all makes in Turkey in 1931 were about 23,000 tires, of which 9,000 were passenger-car tires and 14,000 truck tires.

(Other news of the industry will be found on Pages 537-542)

Late Developments in RUBBER ROADWAY SURFACING

Rubber Producers' Associations Are Very Active in Promoting Roadway Propaganda and Are Making Numerous Experiments—Rubber and Asphalt Mixtures Being Tried Out—Experimental Roadway Laid in Singapore

By E. G. HOLT

Chief, Rubber Division, Department of Commerce

THE present over-production of rubber and consequent low prices are naturally stimulative of new uses and applications for the commodity, and a broadening of older uses. In the field of rubber footwear, rubber has for years gradually been gaining at the expense of other materials, and the extreme low prices of the past three years have made rubber footwear of Japanese and Malayan manufacture available to millions in India and other parts of the East who never used any footwear heretofore. Rubber and fabric belting for machinery has found a gradually expanding market and has partly replaced other types. But because rubber is capable of such a wide range of physical attributes after vulcanization, almost any article can be produced from it.

It is this consideration which led an inventor in Malaya to say early in 1932, "There is overproduction (of rubber) if you are satisfied to cater only to the tire industry and the . . . rubber articles which are manufactured at present. But this is not a tithe of the uses to which rubber can be put. Do you realize that the world is crying out for rubber roads which will lessen the terrific city noises and prevent damage through vibration, that almost anything can be made of rubber, and that once this is realized, the East will not be able to grow enough rubber to cope with the demand?"

Although the immediate outlook for increased consumption through new uses is affected adversely by depression influences, the cheapening of the raw material must eventually widen the scope for its applications. Among such applications, rubber street surfacing, it has been publicly stated by several of those prominent in the rubber planting industry, offers the greatest immediate possibilities.

Advantages of Rubber Surface

The unique suitability of rubber for street surfacing is undeniable. Its ability to absorb the vibration and shocks of vehicular traffic makes it a protection to abutting property owners and lessens the danger of foundations of buildings and bridges being weakened, while at the same time protecting underground gas and water mains as well as the roadbed itself. Its comparative noiselessness makes it especially adaptable for use near hospitals, universities, and churches, and in city streets generally. Its impermeability to moisture serves to protect the roadbed from the effects of water infiltration. With the improved rubber compounding of today, rubber paving is no longer slippery and increases the safety from accidents of both pedestrians and vehicle drivers. It makes a surface free from dust and mud, easily cleaned by washing when desired, but requiring no sprinkling to lay the dust. It requires no tarring or sanding for upkeep.

Until very recent years, manufacturers were inclined to regard rubber roadways impracticable because of the high price of crude rubber, and were not particularly interested in their possibilities. Their development has been sponsored chiefly by rubber producers interested in providing a wider market for their raw material. Heads of municipal highway departments have naturally been chary of employing this type of road surfacing during the stage of its experimental development, especially because of its high cost. It results that rubber producers, through an organization known as Rubber Roadways (Ltd.), and through the propaganda departments of their associations, have been left to carry on the developments in the face of public inertia. During 1931 a campaign was undertaken by the Rubber Growers Association (England) to provide quantities of crude rubber free or at nominal cost for the development of rubber roadways and sidewalks, and the propaganda departments of this association and of the (The Hague) International Association for Rubber in Netherland India devoted much attention to the subject. The interest and support of rubber planters generally was shown by the fact that substantial quantities of rubber were agreed to be supplied free, and a much larger supply was guaranteed at low prices.

New Roadway Surfacing in Singapore. Pouring the Rubber Mixture in a Manner Similar to Concrete

Superior Durability

The experiments have been mostly with paving blocks of various specifications, shapes and sizes. They have demonstrated the satisfactory wearing qualities of rubber paving, as compared with other types. A recent paper presented in Paris by Robert Hallet states the estimated life

of rubber paving blocks as forty years against twenty years for granite blocks, ten years for wood blocks, and eight years for asphalt. The actual life of rubber paving blocks is not yet known because none have been in operation for a sufficient period. It is known that blocks laid in Singapore in 1922 are still in excellent condition, in spite of heavy traffic and the heat, while other pavings in the vicinity have already been replaced two times during the period. It is known that the paving in New Bridge Street, London, is capable of resisting over a period of years tremendously heavy traffic conditions, and the section laid in 1923 around the Cenotaph in London aids by its reduction of noise in the effective impressiveness of that monument and shows no signs of wear to date.

Cost Factors

Regarding the cost of rubber surfaced streets on a mass production basis, there is little factual data. At present there are 4,200 square yards of rubber roadways, mostly in small demonstration plots, in various cities in Great Britain, France, Netherlands and Malaya. They were put down when methods of laying were not standardized and the blocks were made on a small production basis when the

Leveling the Mixture. The Work is Done by Hand. Rubber Mixture is Laid Over Rock Base

price of rubber was far above today's level. Mr. L. Gaisman, a British manufacturer of rubber paving, made a statement last fall that with crude rubber at 6d. a pound, a mile strip of 30-foot rubber paving would cost £44,000, and that the rubber itself would represent about 11 per cent of the cost. Thus, with rubber under five cents a pound, it is certain that the cost of manufacture or rubber paving and the cost of laying it are much more important than the cost of the raw material. On an organized mass production basis the manufacturing cost would certainly be reduced.

New Types Being Developed

The relatively high cost of manufacture and application of roadbed have turned experimental work into new channels recently. Attempts are being made to develop a rubber material which can be spread on the road and vulcanized in situ, these attempts frequently involving the use of rubber latex or liquid rubber. A recent French experiment involved the cementing of large slabs or plaques of rubber of uniform thickness over the roadbed, and while difficulties were encountered in laying the material, accounts state that the practicability of this process was demonstrated and that the cost of this surfacing figured at 250 francs a square meter, against 390 francs for rubber paving blocks. There is as yet a lack of standardization in types of rubber road surfacing, which operates to retard adoption of the material, but the prospects for widespread adoption seem more hopeful now than at any time in the past.

Tests at Singapore

In Singapore, according to a report to the Department of Commerce, from Assistant Trade Commissioner Darwin DeGolia, dated November 17, 1931, tests have been conducted intermittently with rubber street surfacing over a period of some months, and frequent examination of the sections laid down have indicated that rubber may prove more lasting, cleaner, quieter, and more comfortable to ride on than asphalt, concrete, or brick. Methods employed are shown in the accompanying photographs. The process used in Singapore is based on the method of cold vulcanization which, it is claimed, provides a perfectly vulcanized rubber quickly, without machinery and at normal temperature and pressure. The inventor has been granted Malayan patents, and is endeavoring to demonstrate the large scale possibilities. Details of the process have not been revealed. Either latex or crude rubber may be used, however, and a proportion of about one-third carbon black, by volume, goes into the final mixture. The resultant mixture is a grayish solution of about the consistency of cement and is poured in the same manner. Although operations have been performed entirely by hand, the process is readily adaptable to large scale preparation and laying. The cost of the surfacing is estimated by the patent owners at three Straits dollars a square yard, or $1.75, laid.

"Colastex" in Netherlands India

Assistant Trade Commissioner Carl H. Boehringer, Batavia, has forwarded to the Department of Commerce a translation of a lecture made by an official of a Royal Dutch Shell subsidiary, on the use of a mixture containing asphalt and rubber latex for road surfacing. This mixture is known as "Colastex." In Netherland India the modern roads consist almost exclusively of those with asphalt surface. Colastex is a mixture of two emulsions, namely, ten parts of colas and one part of rubber latex. The latex used is of 30 per cent rubber content, and is sieved, skimmed and stabilized. Colas is an asphalt emulsion containing 60 per cent asphalt of the type ordinarily used in Netherland India for road building. Colas was put on the market by the Royal Dutch Shell early in 1930, and Colastex only a few months ago. The approximate present prices for these materials in Batavia are: asphalt, 75 florins a metric ton; colas, 87 florins; and Colastex, 90 florins (florin $.402 U. S. A.). Colastex is claimed to be superior in several respects to ordinary asphalt, the treatment being more durable, less affected by heat, and less sensitive to oil droppings from automobiles. At Semarang a heavily trafficked road has already partly been treated with the substance, and Batavia will use it for resurfacing the busy Ryswykstraat, and other municipalities are using it experimentally.

Roadways in America

Applications of rubber to roadways in America include its use on the Michigan Avenue Bridge in Chicago and on a bridge at Passaic, New Jersey, and a recent press report of use of latex with asphalt on a road in Portland, Oregon. The preservation of bridges seems thus the chief factor to date in causing adoption of rubber road surfacing in this country.

Four papers dealing with rubber surfaced streets and sidewalks were presented at the Paris Conference on New Uses for Rubber in October, 1931. The authors of these papers anticipate wide adoption of rubber roadways, and generally look upon this outlet as the one possible consuming means of restoring a balance between the supply and demand for rubber. They review the successes to date in overcoming technical difficulties of manufacture and application of rubber roadways, the types which have been developed, and their durability and advantages compared with other types of pavings.

Our Trade in SCRAP *and* OLD RUBBER

Over Million Dollar Business Per Annum—Old Rubber Put to Many Novel Uses — Spain is Our Largest Customer — Old Tires Made into Footwear—Inner Tubes Become Overshoes

THE United States does an export business in scrap and old rubber valued at over a million dollars annually, according to the figures of the Department of Commerce. This export trade, unlike that of other rubber products, has not been so seriously retarded by adverse world economic conditions. Lack of money, in fact, has been an important factor in some countries in the development of a market for scrap and old rubber from the United States.

United States exports of scrap and old rubber have been as follows during recent years: 1929, 56,348,798 pounds, valued at $2,516,180; 1930, 52,898,020 pounds, $1,733,675, and 1931, 53,259,987 pounds, $1,129,326. Almost 97 per cent of our total exports of scrap and old rubber in 1931 was shipped to only ten countries.

U. S. Exports of Scrap and Old Rubber in 1931

	Pounds	*Dollars*
Spain	19,047,833	$495,086
France	8,463,627	178,033
Hong Kong	6,510,124	43,283
China	5,105,614	53,372
Germany	2,942,960	72,474
Canada	2,564,206	55,808
Japan	2,252,947	36,290
United Kingdom	2,068,515	89,254
Portugal	1,612,860	42,554
Italy	891,466	19,782
Netherlands	531,731	8,317
Algeria and Tunisia	486,446	11,059
Argentina	259,425	5,910
Belgium	156,450	4,446
Canary Islands	78,474	1,804
Rumania	77,636	2,872
Others	209,673	8,982
Total	53,259,987	$1,129,326

Of the sixteen countries named above, nine import scrap and old rubber almost solely for use in their rubber manufacturing industries, where it is used after being processed by rubber reclaimers. These countries are France, Germany, Canada, Japan, United Kingdom, Italy, Netherlands, Argentina, and Belgium. Hong Kong, China, Portugal, Algeria and Tunisia, Canary Islands, and Rumania, therefore, are the seven remaining designations for shipments of discarded tires and old rubber goods which consume the bulk of such products without preparation by rubber reclaiming plants.

Spain is the largest market for United States exports of scrap and old rubber. Such products are used as raw materials for making low priced footwear and other goods, besides certain quantities are reclaimed and used as reclaimed rubber in the Spanish rubber industry.

Canvas shoes, known as "alpargates," with rope or rubber soles are widely used in the rural districts. A few years ago a type of this shoe known as the "abarca" with soles made from discarded tires came into popularity. This type, however, has been slightly displaced by shoes with rubber soles made by grinding and compressing various forms of scrap rubber. Rubber heels also have become popular in recent years and they are made by many establishments.

China and Hong Kong, when combined, comprises the second market in size for United States shipments of scrap rubber. Practically all of the old rubber shipped to Hong Kong is used in Southern China and in the small rubber Chinese manufacturing industry centered at Canton.

The principal demand for scrap and old rubber in China is in the form of discarded automobile tiers which are cut into soles for cheap shoes for the poorer classes. Generally speaking, the purchasing power of the Chinese is very low and articles designed for their consumption must be marketed at the minimum price to suit their purses. Hence, the popularity of the old tire for resoling shoes rather than soles made from more expensive forms of rubber.

The thinner and more worn parts of the old tire are cut out by hand or stamped out by machine to make shoes for coolies, especially rickshaw pullers. The sales price is about three cents per pair. The less worn parts of the tire are nailed on the wheels of cargo trucks pulled by hand, to comply with municipal regulations. Sections of old inner tubes are used as garters and arm bands. Boatmen also use sections of discarded tires as boat fenders on their river craft; however, this use does not create any great demand for scrap and old rubber.

Japanese Scrap Rubber Imports

Japanese imports of waste and old rubber and gutta percha amounted to 6,232,223 pounds in 1929; 2,684,950 pounds in 1930, and to 1,925,627 pounds during the first nine months of 1931. It is estimated that the United States supplied about 90 per cent of the Japanese needs for scrap and old rubber during recent years, the balance coming from China, Australia, and the Straits Settlements.

The great bulk of the scrap rubber imported is reclaimed; mixed with a certain percentage of new rubber, and used in making rubber soles for "tabi," a short cloth sock almost universally worn by laborers in Japan, and a very cheap rubber shoe which is exported to China. While leather shoes are rapidly gaining in popularity among the business men, government employees, students and other desk-workers in Japan, the rubber-soled tabi continues in favor among the laborers and will probably continue to furnish a good market for reclaimed rubber for years to

come. The canvas and cord fabrics of old tires are also salvaged and used.

As far as can be ascertained, none of the rubber tabi sole manufacturers have been importing their supplies of scrap rubber direct. As a general rule, small Japanese manufacturers of any line of merchandise are simply producers and possess no organizations either for the distribution of their products or for the purchase of their raw materials, especially if the products are exported or the raw materials are imported. This is due to a number of causes. In domestic trade, the guild system is very strong and tends to prevent a manufacturer from buying and selling direct, as he would be boycotted by the jobbers' guilds and find his outlet and sources of materials cut off. In foreign trade, the lack of knowledge of foreign languages and of foreign trade procedure, and the lack of adequate financial facilities, prevent small manufacturers from purchasing or selling direct. Consequently a much greater part of the foreign trade of Japan than the foreign trade of the United States is conducted through specialized foreign trading firms.

Odd Uses for Old Rubber

Portugal was the ninth export market in our overseas trade in scrap and old rubber, taking 1,612,860 pounds of such materials in 1931. The Portuguese peasant and shepherd generally speaking have small purchasing power, and discarded tires and tubes are not scrapped as worthless until their last bit of service is utilized.

The Portuguese shepherd always wears a long sleeveless coat with a cape that covers the upper arms of his body, but for the protection of the forearms, he utilizes an old inner tube that extends from the wrists to above the elbows. If affluent enough to acquire four pieces of tubes, he also employs two of them as makeshift puttees for the protection of his lower limbs. Inner tubes also serve the peasants as a sort of overshoe for their wooden sabots, especially when they are working in muddy fields, and strips of tubes are also employed as over straps to keep temporary wooden soles on their leather shoes during wet weather.

Tires are also used for footwear purposes, principally by the poorer rural classes. A piece of casing may be used as a supplemental sole and heel on wooden shoes, or serve as a replacement for soles and heels on leather shoes. Both uses are very common in the rural districts, purchases usually being made at the country fairs held trroughout the country. It is customary to find two or three stands at each fair dealing only in used tires and tubes.

Another curious use for old casings in the wrapping of same onto wheels of wheelbarrows by the peasants, thus equipping the clumsy wooden wheels with rubber tires.

Rubber Testing Equipment

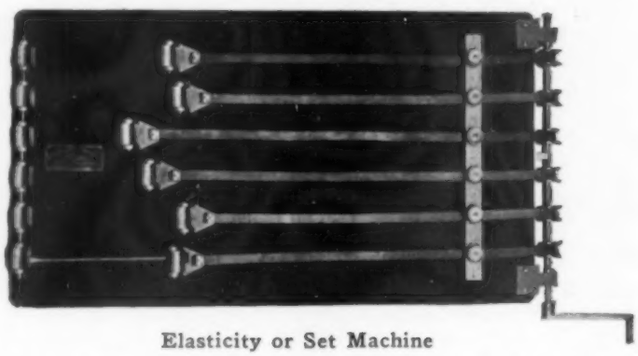
A MACHINE for testing the elasticity or 'set' of rubber is being offered to the industry by the American Instrument Company, 774 Girard Street, N. W., Washington, D. C. 'Set' as applied to rubber is measured by the extent to which the material fails to return to its original length after having been stretched. For example, if a test piece is stretched from 2 to 10 inches for 10 minutes and then released, and if its length measured after 10 minutes' rest is 2.4 inches, the 'set' under these conditions is 0.4 inch, or 20 per cent.

The set, together with the ultimate elongation and tensile strength, is an indication of whether the compound has been properly vulcanized. For a given compound high set indicates undervulcanization.

For merely stretching rubber to determine its elasticity or recovery, after a definite elongation without reference to the tension applied the apparatus shown in the cut is used in which 6 specimens may be tested at once. The spools are free to slide on the shaft and are slotted to engage pins in the shaft which act as clutches.

The movable grips are attached to ¾" wide leather straps which pass through clamps and then to the spools. These clamps are merely thumb screws the lower ends of which bears on their respective straps thus locking them under tension. The operation is as follows:

The specimens being in the grips, one of the spools is moved along the shaft until it engages the corresponding



Elasticity or Set Machine

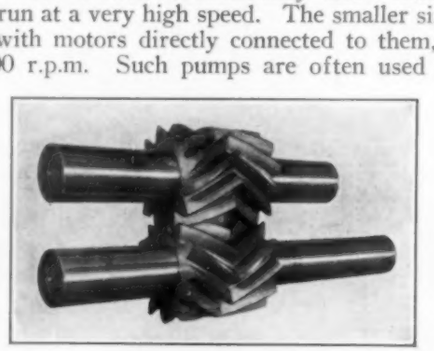
pin, and the shaft is revolved until the desired elongation measured between the gauge marks on the specimen is secured. The clamp is tightened to hold the specimen in this position and the spool is shifted back so as to disengage the pin. The operation is repeated with each of the specimens in turn. Each specimen is released after a specified length of time (usually 1 or 10 minutes), and after an equal interval of rest the permanent extension of set is measured with a scale graduated to 0.01 inch.

The machine is substantially built, having an oak base and all metal parts heavily nickel plated.

Farrel-Sykes Herringbone Gears

FARREL-SYKES herringbone gears, manufactured by Farrel-Birmingham, Inc., Ansonia, Conn., have a wide reputation for use in the transmission of power, but they have, however, other applications which are not so well known.

The illustration shows a pair of pinions, with Farrel-Sykes gears used as impellers, sometimes called cams and rotors, for the gear type of pump. Pumps made with these gears are more efficient mechanically and volumetrically. They can run at a very high speed. The smaller size pumps are used with motors directly connected to them, running up to 1800 r.p.m. Such pumps are often used for high



pressures; 1,000 lbs. per square inch is standard with some makers using Farrel-Sykes gears, and in some special cases the gears are used for pressures up to 1,500 lbs. per square inch.

The gears shown in the illustration run at 435 r.p.m. and pump 625 gallons per minute against a head of 200 lbs. The pump is very small for its capacity, no reduction gears are required, and it is consequently economical to manufacture.

Materials Testing Society Features RUBBER *at Cleveland Meeting*

Committee Reports Cover Many Activities Touching On Rubber Products — Sessions Well Attended — 400 Members Registered

COMMITTEES of the American Society for Testing Materials held another in their series of annual Spring group meetings in Cleveland at the Hotel Cleveland from March 7 through 11. This series of meetings, arranged for the convenience of committee members who are interested in the activities of more than one committee, was well attended.

In all, 20 main committees of the society took part, but with the many section and subcommittee meetings necessary, over 100 meetings were held during the five days.

The Cleveland regional meeting was the third held by the society in conjunction with the group meetings of committees. This comprised a symposium on rubber given in two sessions—followed by a dinner of A. S. T. M. members and guests. The symposium program, sponsored by A. S. T. M. Committee D-11 on Rubber Products, comprised twelve papers. The five which were given in the morning session involved the general subject, "Manufacture of Rubber Products," while those in the afternoon group discussed the "Properties of Rubber as an Engineering Material." Both sessions were well attended. The titles of these papers, together with brief abstracts, were given in the February 10 issue of THE RUBBER AGE, page 393.

At the dinner in the evening, a short address was given by Dr. F. O. Clements, technical director, General Motors Research Laboratories, and president of the American Society for Testing Materials. In the course of his talk, which dealt with the importance of testing, he said, "Our principal task is putting salt on the tail of ideas and taming them for practical use."

Dr. Karl Arnstein, vice-president, Goodyear-Zeppelin Corporation, prepared an address which was delivered by an associate due to the fact that Dr. Arnstein was suddenly called to Lakehurst for consultation.

Committee D-11 on Rubber Products received reports from several subcommittees recommending revisions in present standards. The committee outlined a very extensive program of work to be shortly undertaken.

New Hose Specifications

The subcommittee on mechanical rubber hose voted to instruct one of its sections to undertake the preparation of separate specifications and test methods for braided hose and for wrapped hose, but not to include fire hose. It is intended that the new specifications when prepared will replace existing standard specifications for individual types of hose which are now standard, including standard specifications for braided air hose for use with pneumatic tools (D 60-24), standard specifications for wrapped cold water hose (D 177-24) and standard specifications for wrapped air hose for use with pneumatic tools (D 40-24).

The committee took action to recommend the withdrawal of the procedure for chemical analysis of rubber products appearing in the "Standard Methods of Testing Rubber Products" (D 15-24) which have been standard since 1924. Investigations are also in progress on the development of suitable physical tests of the performance type for rubber products which will be designed to replace the present tests for physical properties appearing in the "Standard Methods."

A performance specification for rubber compound for wire and cable has already been prepared, including methods of accelerated aging and physical tests of insulation.

New tentative specifications covering rubber insulating tape suitable for insulating joints in electric wires and cables and for other insulating purposes were accepted by the committee to replace the present tentative specifications.

New Specifications for Friction Tape

A complete revision of the standard specifications for friction tape for general use for electrical purposes has also been prepared to replace the standard specifications which will be withdrawn. The new specifications cover commercial friction tape consisting of strips of cotton sheeting impregnated with an adhesive insulating compound. The tape is for use in binding and protecting insulation applied to joints of wires and cables, and for other purposes.

The subcommittee on Protection of Persons from Electric Shock has in preparation specifications for linemen's blankets.

The subcommittee on Packings, Gaskets and Pump Valves is being reorganized with a view to securing more general representation of all interests concerned with rubber products of this type.

Considerable work has been done by the subcommittee on Life Tests for Rubber Products. An extensive report was presented to the committee at this meeting giving results of a three-year test program including a correlation of results of tests with actual life in service. It is believed that much would be gained by a study and analysis of the data obtained in these tests and accordingly a section was appointed to undertake this work. The Life Test subcommittee has also undertaken a schedule of tests on a single compound using unaged samples cured in one laboratory and distributed for test purposes to twelve cooperating laboratories. The tests will be made in accordance with the standard test procedure of the American Chemical Society. This subcommittee also has before it a proposal to adopt the standard procedure for Geer oven aging and oxygen bomb test. This project will be cooperative between the physical test committee of the American Chemical Society and the Life Test subcommittee of Committee D-11.

The subcommittee on Physical Testing reported that it had received data in answer to a questionnaire which was distributed recently to many laboratories. Replies received from 59 laboratories are in the course of tabulation.

The subcommittee on Rubber Products for Absorbing Vibration reported the appointment of new sections on the adhesion of rubber to metals and metallic products and a study of tests involving repeated compression. This sub-

committee is also doing work on the hardness test in order to determine the range of hardness of rubber that can be studied by the hardness instrument described in the present Tentative Method of Test for Hardness of Rubber. This subcommittee also announced its intention to proceed with the preparation of a method for testing cold flow of rubber. This study will be based on the best existing knowledge on this subject and it is hoped that a report may be made at the next meeting in June during the A. S. T. M. annual meeting in Atlantic City.

The new subcommittee recently appointed on Dynamic Fatigue Testing for Rubber Products has appointed two sections to undertake studies in this field. One section was instructed to prepare the best method now known for conducting ply separation flexing test as applied to rubber fabric combinations using machines of the Scott type. Another section will carry out work on the development of methods for flex cracking tests.

The officers of Committee D-11 on Rubber Products, during the Cleveland meetings were C. R. Boggs, vice-president, Simplex Wire and Cable Company, acting chairman, and Arthur W. Carpenter, B. F. Goodrich Company, secretary.

Automotive Rubber Problems

FOLLOWING is a more complete abstract of R. K. Lee's paper, of the above title, which was presented at the Detroit meeting of the Rubber Division, A. C. S., on February 25, 1932. The short abstract, published on page 484 of THE RUBBER AGE, March 10, 1932, was prepared from notes taken by our representative at the meeting, whereas the following synopsis has been prepared directly by Mr. Lee, at our request, but was received too late to be included in the report of the Detroit meeting, published in the last issue of THE RUBBER AGE:

Most people have obtained the impression that rubber engine mountings are merely the placing of a body of rubber at the points of contact between the engine and the frame. This, of course, was the first rubber engine mounting and there were so many defects found with this type mounting that it was not even placed in production.

It was found (1) that a great many new troubles arose which would more than offset any advantage received by the insulation qualities; (2) that the motor would move through considerable amplitude when the car was run at high speeds over rough roads; (3) that there would be considerable torque reaction vibration depending on the disposition of the rubber; and (4) that due to the strains of assembling, it was very hard to make two cars similar in vibration characteristics due to the variation in compression on the rubber, in permanent set, etc. It was necessary for us, therefore, to make a thorough investigation on, first—the characteristics of engine vibration; and, second—the properties of rubber.

We spent considerable time and effort constructing our rubber laboratory and going through all conceivable tests on rubber, and succeeded in learning the variations which could be permitted in automobile manufacture and in harnessing the motor in accordance with our rubber characteristics.

We found that by adhering rubber to metal in sandwich form, we could obtain very uniform results in the way of deflections, and furthermore that the aging characteristics took on an entirely new aspect. If the rubber is substantially sealed by metal, the oxidation is practically eliminated and the deflection curves stay approximately the same through an indefinite period. We have had tests of rubber adhesion samples over a period of four years where the deflection characteristics have varied less than six per cent and when torn open the rubber seemed to be in almost perfect condition even though, during the life of the article, it was subjected to considerable heat.

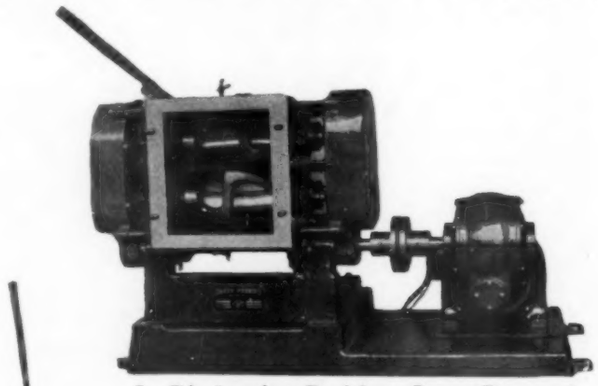
I believe that this property opens up an entirely new line of possibilities for the automobile industry and also for the rubber industry, and that rubber will eventually find itself being placed in extremely critical positions where accuracy of manufacture and consistency of physical characteristics are absolutely necessary.

To give you an idea as to the growth of rubber consumption in the automobile plant, the original Chrysler "Six" sedan used 2.4 pounds of rubber exclusive of tires, and the 1932 Chrysler "Six" of approximately the same displacement contains over 40 pounds of mechanical rubber goods, showing a gain of over 1600 per cent in the last eight years.

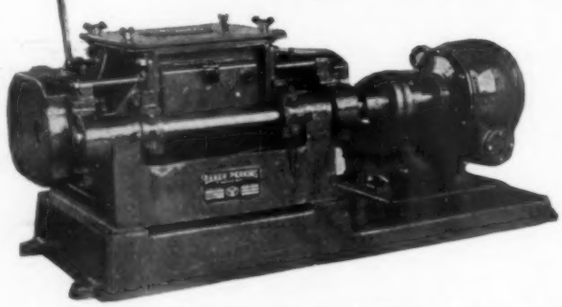
By means of slides and demonstration models, the writer was able to illustrate some of the principles involved in engine vibration, and I thoroughly believe that the members of the Rubber Division visualized the importance of extreme care in manufacturing rubber goods and in maintaining the physical properties where the automobile engineer is counting on these properties for a particular function in the automobile.

New Model Mixer

THE new model Baker Perkins mixing and kneading machines, manufactured by Baker Perkins Company, 250 Park Avenue, New York City, are being furnished as a complete motor-driven unit, with mixer and motor mounted together on a cast iron bedplate with flexible coupling. Considerable space is saved by the use of a motor with built-in worm gear speed reducer. The mixers are built in two sizes—the size 4 of one-half gallon working capacity, and the size 6 of 2¼ gallons working capacity.



In Discharging Position, Cover Removed



In Operating Position, with Air-Tight Cover in Place

The trough is jacketed for heating or cooling and equipped with an air-tight cover, as required.

The mixing blades are equipped with adjustable packing glands where they pass through the trough ends and are fitted to the trough with very close clearance.

The machine is tilted for discharge around the drive shaft, which leaves the gears always in engagement so that the blades may be operated in discharging position. When a pulping and shredding action is required, or when it is desirable to incorporate fibrous material in a plastic mass, the trough is fitted with a serrated saddle and the working edges of the blades are serrated.

In addition to the standard construction in cast iron and steel, these mixers are also built in the various corrosion-resisting metals and alloys to meet exacting requirements. When a mixing problem involves operation under high vacuum or under considerable internal pressure, an arrangement is provided whereby the whole mixer operates in a suitable enclosure.

I. R. I. Examination

Examination Paper in Science

[SIX *questions are to be attempted. No.* 9 *is compulsory.*]
[FIVE *are to be selected from the remaining eight.*]
Time allowed 3 hours.

Ques. 1. Describe some of the important conclusions which have been derived from the study of the swelling of vulcanized rubber. In your opinion could swelling determinations be made the basis of a practical evaluation of vulcanized rubber?

Ques. 2. Rubber can be vulcanized with nitro-compounds. What are the advantages and disadvantages of this process compared with ordinary sulphur vulcanization?

Ques. 3. Give some of the more recent theories of the action of accelerators.

Ques. 4. Describe tests which you would apply to a fabric or a compounding ingredient to be used in conjunction with rubber in order to ensure that neither copper nor manganese is present in objectionable quantities.

Ques. 5. Give a brief account of the principles involved in the use of latex directly in the manufacture of rubber articles.

Ques. 6. State the principal reasons for incorporating each of the following ingredients in a rubber mixing:—(*a*) reclaim, (*b*) zinc oxide, (*c*) gas black. Indicate in each case any other incidental effects on manufacturing operations or properties of the vulcanizate.

Ques. 7. Describe some form of apparatus suitable for automatic control of vulcanizing temperature. Give three examples of conditions under which the pressure of the heating steam is unreliable as an index to the temperature of the rubber.

Ques. 8. Give an account of the thermal effects of the chemical combination of rubber and sulphur and indicate the bearing which they have on rubber manufacture.

Ques. 9. Translate one of the following passages.
(Note.—*Dictionaries may be used.*)

A. Der Kautschuk hat sich vorwiegend wegen seiner mechanischtechnologischen Eigenschaften, die im wesentlichen physikalische Grundlage haben, nämlich Festigkeit und Formänderungsfähigkeit, Elastizität, elektrisches Isolationsvermögen u. a. in fast allen Zweigen der modernen Technik Verwendungsgebiete erschlossen. Es lag daher nahe, dass der Prüfung des Kautschuks auf diese Eigenschaften hin Aufmerksamkeit mindestens im gleichen Masse wie der chemischen Prüfung zugewendet wurde, und so haben mittlerweile die Ergebnisse mechanisch-technologischer Kautschukprüfungen auch allenthalben massgebliche Bedeutung als Gütemassstäbe gewonnen.

B. Par suite de la faible conductivité de la chaleur des composés de caoutchouc la température à l'intérieur d'un objet de caoutchouc au cours de sa vulcanisation est inférieure à celle de la partie extérieure. L'intensité de la vulcanisation dépendant de la température, la vulcanisation d'un objet diffère donc considérablement de l'intérieur a l'extérieur. Aussi dans le but d'évaluer la vulcanisation, est-il intéressant de connaître exactement comment varie l'intensité de la vulcanisation avec la température. A cet effet, des essais on été réalisés avec des échantillons contenant des mercaptobenzothiazols. On a déterminé les coefficients de température pour ces mélanges, ainsi que pour un mélange contenant comme accélérateur un produit de condensation de l'aniline et de la crotonaldéhyde.

Rubber Diaphragms for Aeronautic Instruments

IT IS recognized that rubber with good aging characteristics would be of value as a material for making diaphragms for sensitive pressure indicators, owing to its large deflections as compared with other materials commonly used. Rubber diaphragms used previous to 1924 performed satisfactorily for a short period of time, but owing to the rapidity with which the rubber deteriorated the instruments required frequent recalibrations and ultimately became unfit for use in a much shorter time than is desirable.

In cooperation with the National Advisory Committee for Aeronautics, an investigation was carried out at the Bureau of Standards, Washington, D. C., on special compositions of rubber suitable for use as diaphragms for aircraft instruments, according to the latest issue of the *Technical News Bulletin,* of the Bureau.

As part of this study six samples of rubber were used as taut diaphragms in instruments and allowed to age for five years. Two of the instruments were in operating condition after this period of time, and one showed remarkably little change in performance.

It should be remarked that when this investigation was undertaken in 1924, none of the commercial anti-oxidants now used in rubber were available.

Sponge Rubber Volume Costs

IN manufacturing sponge, the rubber may be blown anywhere from two to eight times its original volume. Pigments cannot be expanded, and are therefore expensive materials in sponge. Below is shown volume cost of blown rubber and some standard compounding materials:

Material	*Pound cost*	*Expansion in cure*	*Blown, cured, specific gravity*	*Cured cost per cubic foot*
Rubber	$ .05	5 times	0.19	$ .58
Zinc Oxide	.07	None	5.60	24.50
Lithopone	.05	None	4.20	13.10
Barytes	.015	None	4.20	3.93
Clay	.01	None	2.60	1.62
Whiting	.01	None	2.60	1.62
Petrolatum	.04	None	0.90	2.24

(R. R. Olin Laboratories, Akron, Ohio.)

52-Foot Rubber-Lined Stack

THE above illustration shows the installation of a 52-foot "Ace" hard rubber lined stack to carry off acid fumes and insure proper ventilation, at the plant of the Etched Products Corporation, New York. Ace hard rubber lined stacks are manufactured by the American Hard Rubber Company, 11 Mercer Street, New York City, and are made in standard units for easy installation.

EDITORIAL COMMENT

Introduce New Products Now

PERIODS of depression, such as that which we are now passing through, can hardly be looked upon with any degree of satisfaction by manufacturing concerns who serve as suppliers to industrial plants. Buyers are not buying;—consumers are not consuming,—so why try to interest your customers and prospects in your present products or in any new or improved machinery or materials? That is the feeling among many companies today.

Needless to say, there is a serious fallacy in such an attitude,—especially as regards the introduction of new or improved products at this time.

Let us look for a moment at the other side of the picture. Might it not be said, with equal force, that it is inadvisable to endeavor to introduce a new or improved product when your prospect's factory is going full blast,—24 hours a day,—to fill his orders? Is there any greater likelihood that your prospect will stop and listen to a story at that time, about a new machine, for instance, even if it helps to decrease his costs or improve the efficiency of his plant? Is it logical to expect that he will stop production at its peak, or even disturb his production schedule, to place your new machine in operation? That is at least just as good an attitude to assume as that he won't buy when his factory is working only 3 days a week.

The point is that you can sell a good product,—a new or improved machine or piece of equipment, a new accelerator or a new rubber softener, at any time, if you make the proper approach and presentation but the odds are in favor of getting a better reception in so-called dull periods than in good times.

Today factory executives are not as busy as they used to be,—but no one believes that they won't be busy again, even if those busy days are not just around the corner (as we used to think). Factory executives are in a position today to consider, at more leisure, any new idea or machine or material which is offered.

We know of two concerns who have developed new equipment for rubber factories, within recent months. One has stated that it will announce its machine shortly; the other expects to await the return of better times. Is there any doubt which of these two concerns will be better off twelve months from now? It is only a matter of looking at the situation sanely. If you have a new product which can be used in the rubber industry, bring it out now. Let the manufacturers test it,—try it out in production on a limited scale,—and when production begins to step up in answer to increased demand, they will have full information on your product and can put it to immediate use.

Don't wait. Announce your new products now.

Reclaim Challenges Crude

THE rubber reclaiming industry should take considerable satisfaction from some of the fears expressed in the Malayan and British press as to the possible decline in European-owned plantation rubber. The point has been stressed that whereas the chief sources of supply of rubber in order of merit or quality heretofore were European plantation rubber, re-milled native rubber and reclaimed rubber, the position is now somewhat reversed with reclaimed rubber commanding a higher price than crude and with no signs of any diminution in production, and some manufacturers also showing a preference for re-milled native rubber over the plantation grades.

From the manufacturer's point of view the two most important factors in crude rubber are uniformity of quality and cleanliness from impurities. As far as cleanliness is concerned the plantation product surpasses all its rivals but in respect to uniformity, it has dropped to third place. The popularity of reclaimed rubber in the eyes of the compounder can be said to be largely due to the fact that it is now supplied in specific standard qualities. This point is of supreme importance to the manufacturer whose chief difficulties consist in standardizing his processes of vulcanization and curing.

Similarly, with re-milled rubber, the millers have now developed certain definite standard grades, which though still lacking in thorough cleanliness, are superior in uniformity to the established plantation grades.

It would appear, therefore, that reclaimed rubber not only now stands upon its own feet, so to speak, and is firmly established as a chief supply of rubber, but it is actually challenging the supremacy of its forebears, European plantation crude.

The RUBBER AGE

Published on the 10th and 25th of each month.
The Only Twice-a-Month Rubber Publication.

THE PALMERTON PUBLISHING CO., INC.

Editorial Office, 250 West 57th St., New York City

Telephones: COlumbus 5-2923, 5-2924

THE RUBBER AGE is published on the 10th and 25th of each month by The Palmerton Publishing Co., Inc., a New York corporation. P. L. Palmerton, President; Earl D. Osborn, Vice-President and Secretary; Peter P. Pinto, Treasurer. Publication Office, 1-3 Peace Street, New Brunswick, N. J. Subscription rates: Domestic, $2.00 a year; Canada, $3.70; foreign, $3.00; single copies, up to 3 months old, 20c; over 3 months old, 50c. Advertising rates on application.

Contents Copyrighted 1932 by The Palmerton Publishing Co., Inc.

THE RUBBER AGE is indexed in *Industrial Arts Index*

General Manager.....PETER P. PINTO
Managing Editor.....J. P. BUSHNELL
Circulation Manager.....M. A. KRAMER

Representatives in all the rubber centers of the United States, Canada, England, France, Germany and the Middle East.

The Rubber Industry's CURRENT NEWS

Financial—Personals—New Rubber Products—
Building Operations—Manufacturing—Exports

MANUFACTURERS FIGHT PROPOSED SALES TAX

Directors of the Rubber Manufacturers' Association of America were in session in New York, March 9, to protest proposed federal taxes on tires.

Representatives of principal Akron companies, including James D. Tew, of Goodrich, also president of the Rubber Manufacturers' Association, attended.

The session call expressed a fear that one or both of two kinds of taxes on rubber tires would be imposed—one a manufacturers' tax and the other a sales tax. The industry protested the taxes in public hearings before the House of Representatives Ways and Means Committee in Washington earlier in the year.

The contention of the rubber manufacturers is that a tax on tires constitutes a levy comparable with the general property tax, in that it falls upon classes of property now most heavily burdened. Rubber manufacturers have pointed out the present extent of motor vehicle taxation in supporting their claim.

General Declares Dividend

Payment of the fifty-ninth consecutive dividend on the preferred stock of the General Tire and Rubber Company was authorized at the recent meeting of the directors of the company. This is the regular quarterly dividend of $1.50 a share and is payable on March 31 to stockholders of record as of March 21.

Action on the General common stock dividend is due in April. In January the stock was reduced from a $3 to a $1 annual basis.

The company holds the distinction of never having failed to pay dividends on both classes of stock since its organization in 1915, a record that is held by no other of the large rubber companies.

National Rubber Machinery Co.

Report for the year ended December 31, 1931, of the National Rubber Machinery Company, shows a net profit of $37,839 after depreciation, interest, federal taxes, non-operating charges covering loss on scrapped assets, etc., equivalent to 33 cents a share on 113,420 no-par shares of capital stock. This compares with net loss of $33,-523 in 1930.

Current assets as of December 31, 1931, including $160,553 cash, amounted to $735,-666 and current liabilities were $198,206.

Kelly-Springfield Officers

William H. Lalley was elected president and treasurer of the Kelly-Springfield Tire Co. at a meeting of the board of directors March 18. Since March of last year, Mr. Lally has held the office of president only. Other officers elected were: Matthew B. Muxen, chairman of the board; Louis Mueller, first vice-president; Herbert B. Delapierre, secretary and assistant treasurer; E. G. Roff, assistant secretary. Members of the executive committee: J. K. Newman, chairman; W. M. Flook, John M. Hancock, William H. Lalley, Frank Wilbur Main, Louis Mueller, Matthew B. Muxen.

Goodrich Sales Increase

An increase in Goodrich Silvertown tire sales, during January and February, aggregating 25 per cent in unit volume over sales in the corresponding period of 1931, was announced recently by James D. Tew, president of the company. The increase in sales are attributed to the new "safety" tire and the colored sidewall tires introduced within the last two months.

The new colored tires are made by an exclusive "colorweld" process by which color is impregnated in practically all popular shades.

Tire Chains Not Accessories

A court decision which may also have application to manufacturers of rubber tire chains, in which it was decided that tire chains were not automobile accessories and were therefore not subject to the Federal excise tax on automobiles levied during the years 1921, 1922, and 1923, was handed down in the United States District Court at New Haven, Conn., in a case where the American Chain Company was the plaintiff. Judgment was for $600,136.57 plus interest.

The chain company had brought suit against Robert O. Eaton, collector of internal revenue for the District of Connecticut, contesting the collector's interpretation of the tax law, which was repealed in 1924.

Counsel for the company maintained that chains were not car accessories, but were in general use. Their use on tractors and other vehicles was cited.

With interest for about ten years figured in, it is estimated tht the chain company will receive about $900,000 from the government. The progress of the case has attracted nation-wide attention.

TIRE NOISES TESTED BY GOODRICH EXPERTS

Hundreds of tests are now being made with a new "electric car" by The B. F. Goodrich Company to determine various kinds of noises which tires produce, and their intensity, so continued improvement can be made in design, especially in treads, to eliminate noises and produce a tire as nearly silent as possible in actual operation.

In charge of W. F. Billingsley, test engineer and H. F. Schippel, design engineer, an automobile has been equipped with the most modern sound detecting devices. Tests are made in actual road operations.

A condenser microphone is installed in place of the rear seat and a 4½ inch tubing connects it with a hole in the car floor six inches from the right rear wheel. This installation proved the most successful because it gives fewer noises from the motor, gears, exhaust and the wind. Suspension of the microphone below the floor of the car was first tried, but discarded because it picked up these foreign noises.

The microphone is connected to a Burgess acoustimeter, giving especially sensitive readings. A sound filter permits elimination of most foreign noises, allowing concentration on those made by the tire through contact with the roadbed. The filter also takes out all noises above a certain frequency.

In tests, the car is accelerated up to its maximum speed, put into free wheeling, and allowed to coast with motor shut off. Noise readings are made every five miles as the speed decreases. Tests are made at various stages in life of the tire to determine changes in noise produced as the tire wears down. A ribbed tire, smooth, without tread design is the standard by which all other types are measured for silence on the road.

Tests are designed to effect improved silent tire operation, while continuing development of maximum traction and safety in tread design.

Hamilton Has Fire

A three-story frame addition to the plant of the Hamilton Rubber Manufacturing Company, Trenton, N. J., together with a large quantity of scrap rubber were destroyed by flames, March 10. The blaze started in a pile of scrab rubber and was fanned to the plant by a stiff breeze. Water from the sprinkling system also ruined some stock and disabled the company's motors. None of the employes will lose any time through the fire.

DORN BECOMES HEAD OF BARR RUBBER CO.

At the annual meeting of the Barr Rubber Products Company, Sandusky, O., on March 8, Randolph J. Dorn was elected president to succeed the late Nelt Barr, who died suddenly on February 20. Dr. Henry Graefe and Herbert I. Scott were elected vice-president and secretary-treasurer respectively.

The elevation of Mr. Dorn to the presidency of the company is taken as recognition of his constructive activities in the affairs of the concern under the late Mr. Barr.

The financial position of the company has been made exceptionally secure through the legacy of $175,000 in the form of insurance left by Mr. Bar and made out to the company as beneficiary. It is stated that through the receipt of this sum, the company is in a position to pay all current and deferred liabilities and leave a considerable surplus in the treasury, thus allowing the concern to carry out important improvements and ideas of the late Mr. Barr without additional financing or the touching of the present surplus.

The plant has been working steadily and employs about 200 hands. President Dorn has recently returned from a western trip where he reports promising prospects for the company's business.

Pacific Hard Rubber Co.

The Pacific Hard Rubber Company, Los Angeles, Cal., has recently acquired the common stock of the United Rubber Corporation, San Francisco, a former affiliate of the Pacific company, and has purchased the stock personally owned by W. R. Smith and Herbert King, two of the leading stockholders of the United corporation, and president and vice-president of the old concern.

For the time being the two companies will operate as separate concerns but the factory of the United Rubber Corportion is being moved to the plant of the Pacific Hard Rubber Company, where eventually the activities of the two concerns will be merged in the manufacture of hard rubber and composition battery boxes, battery covers, vents and bushings and miscellaneous molded articles.

Victor Rubber Reorganizes

A reorganization of the Victor Rubber Company, Springfield, O., which was established six years ago to manufacture mechanical rubber products, has been announced. The new concern will be the Victor Rubber Corporation and will be directed by the following officers: L. C. Sturgis, president and general manager; George Cugley, vice-president and treasurer; R. F. White, secretary; H. H. Durr, sales manager and director; W. J. Ruscoe, technical superintendent; P. M. Hewitt, production superintendent; and M. F. Pierce, director.

Mechanical rubber merchandise manufactured by the Victor Rubber Corporation includes rubber floor mats, running board coverings, radiator hose, automotive rubber essentials, stair treads, landing mats, door mats and other items in continuous demand.

"The Victor Rubber Co., during its existence, always observed a conservative policy in the treatment of its business accounts, and through this course has won an enviable reputation among those with whom it has had business dealings," Mr. Cugley said.

Assets and liabilities taken over by the Victor Rubber Corporation from The Victor Rubber Company, based on an audit by J. H. Baldwin, certified public accountant, as of Jan. 1, 1932, are as follows:

Cash and total accounts receivable, $36,136.37; total inventories, $35,240.10; total current assets, $71,372.47; fixed assets, land, buildings, etc., by Lloyds Appraisal plus subsequent additions, $535,749.04, less reserve for depreciation, $218,810.06; net fixed assets, $316,938.98; deferred assets, $1,932.12.

Total assets of the corporation, $39,243.57; trade accounts payable, including current commissions, $34,920.85; notes, $15,554.80; accrued liabilities, $7,609.50; mortgages payable, $12,917.50; total indebtedness, $70,802.65. Taking into consideration the stock issued for the property, the net surplus is $219,440.92 and the total net worth of the Victor Rubber Corporation will be $319,440.92.

Mr. Sturgis entered the rubber industry after retiring from the steel field. He has been connected in executive capacities with The Firestone Tire and Rubber Company, of Akron, and The New Castle Rubber Company, of New Castle, Pa., which organization was absorbed by the Seiberling Rubber Company.

Rubber Seats for London Buses

Special shock-absorbing rubber seats are being fitted in the latest type of London passenger bus. Thick slabs of special sponge rubber are replacing the usual spring and horsehair stuffing. These cushions, which are fitted under the ordinary seat covers, are resilient enough to support comfortably a weight of 200 lbs.—or more if needed—without full depression. At the same time they remain pliant enough to absorb all shocks. Some 250 of these new buses are being placed on the London streets.

Alabama Factory to Start

The plant of the Robbins Tire and Rubber Company, located at Florence, Ala., and acquired recently from the Rubber Products Corporation of Alabama, is expected to be in operation within the next few weeks.

E. C. Robbins, formerly of Dayton, O., president of the new company, announced first operations will be for the manufacture of V-shape automobile fan belts and that within the near future machinery for rebuilding tires will be added.

Mr. Robbins said approximately 150 workers recruited locally would be employed in the plants as soon as equipment is installed. He said distribution of the products would be through the Skinner Tire and Rubber Company of Dayton, with which the Alabama concern is connected.

KELLY-SPRINGFIELD ON WJZ RADIO PROGRAMS

"Making the Movies with Raymond Knight" is the title of a new series of radio sketches which began Sunday evening, March 20th, at 9:45 p. m., E.S.T., over WJZ and associated stations under the sponsorship of the Kelly-Springfield Tire Company.

Raymond Knight achieved his fame as a radio artist as well as author with Cuckoo hour in the character of Ambrose J. Weems. Burlesque, satire and comedy distinguish all of Knight's programs and in the new series he is expected to have ample leeway for the exercise of his talents in directing and acting.

Radio fans will not soon forget the revival of the old "nickleodeon" in the Cuckoo hour, with its thrilling melodrama, a break in the film at the crucial moment when the villain is about to strangle the heroine and the hero many miles away. In "Making the Movies" all that is ludicrous, every incident with a humorous turn, will be used to best advantage and visualized in the Knightian manner.

Monsanto 1931 Report

The report of Monsanto Chemical Works and subsidiaries for year ended December 31, 1931, shows net profit of $1,280,782 after deprecitaion, interest, federal taxes, etc., equivalent to $2.98 a share on 429,000 no-par shares of stock outstanding at close of year. This compares with $732,684, or $1.73 a share, on 422,600 shares in 1930.

Current assets as of December 31, 1931, including $2,206,112 cash and marketable securities, amounted to $5,895,505 and current liabilities were $940,254. This compares with cash and marketable securities of $2,080,830, current assets of $6,470,676 and current liabilities of $1,031,727 at close of preceding year.

U. S. Rubber Belting Exports

United States exports of rubber belting during the past five years have been:

	Rubber Belting	
	Pounds	*Dollars*
1927	5,010,592	2,681,815
1928	4,887,206	2,785,238
1929	5,670,159	3,056,236
1930	4,297,789	2,195,424
1931	3,191,417	1,382,149

The best markets, in ordered named, were the United Kingdom, Union of South Africa, Sweden, Denmark and Mexico.

Brunswick Rubber Co.

Brunswick Rubber Company, New Brunswick, N. J., has been incorporated at Trenton with $125,000 capital, to manufacture various kinds of rubber goods. The incorporators are Thomas M. Clark, Rose Clark and William J. Harding, all of New Brunswick.

Essex Busy for Ford

Essex Rubber Company, Trenton, N. J., is now working on the annual output of rubber mats for the Ford Motor Company, of Detroit.

INTERCONTINENTAL CO.'S STATEMENT SHOWS LOSS

The annual report of the Intercontinental Rubber Company and its subsidiaries for year ended December 31, 1931, shows net loss of $351,932 after expenses, depreciation and inventory reserve, comparing with net losses of $303,692 in 1930.

Current assets as of December 31, last, including $592,657 cash and marketable securities, amounted to $990,728 and current liabilities were $32,032. This compares with cash and marketable securities of $1,061,583, current assets of $1,516,566 and current liabilities of $82,998 at close of preceding year.

Consolidated income account for year 1931 compares as follows:

	1931	1930
Operating loss	$109,535	$33,930
Other income	45,750	91,411
Loss	$63,785	*$57,481
Expenses, etc.	130,852	193,633
Depreciation	127,710	137,431
Inventory reserve	29,585	30,109
Federal taxes	.....	.....
Net loss	$351,932	$303,692
Dividends	.....	.....
Deficit	$351,932	$303,692

*Profit.

Litchfield Honor Awards

Presentation of the third special Litchfield Award of Merit will be made to an associate of the Goodyear Tire and Rubber Company at the next employers' night meeting at Goodyear Theater, March 26. Name of the honor man will not be divulged until the award is made.

First of the Litchfield awards was made to Carl Wollam for his heroism during the balloon race at Pittsburgh in 1928 when his balloon was truck by lightning.

Second award was a posthumous one to Charles E. Brannigan, pilot of the Mayflower that was caught in a wind at Kansas City last year. His efforts to save his ship resulted in the loss of his life.

Harris Moves Office

Clarence P. Harris, industrial chemist who has done considerable work in rubber chemical fields has announced his change in office location from 522 Fifth Avenue to 174 Madison Avenue, New York City.

Mr. Harris has been particularly interested in the formulation of rubber cements for various purposes and in rubber for linings and acid proofing steel apparatus. He has also been a frequent contributor to the rubber trade press.

Canadian Cos. Adopt Rusco

Two important commercial organizations in western Ontario, the Bell Telephone Company and the Silverwoods Dairies, Ltd., after exhaustive tests are replacing all clutches on their Ford and Chevrolet cars with Rusco clutch spiders made by the Russell Manufacturing Company, Ltd., St. Johns, Que., Canadian plant of the Russell Manufacturing Company, Middletown, Conn., makers of Rusco brake linings and other automotive products.

Nelson W. Pickering

Nelson W. Pickering, who was recently re-elected president of the Farrel-Birmingham Company, Inc., Ansonia, Conn., has been identified with that company and its predecessor, the Farrel Foundry & Machine Company, during all of his civilian business career.

Mr. Pickering was born April 7, 1887, in Cambridge, Mass., and attended the public schools in Roxbury, Mass., later preparing for college at the Roxbury Latin School. In March, 1904, he was appointed to the United States Naval Academy from Massachusetts. After his graduation in 1908 he was assigned to sea duty and subsequently was selected for post graduate instruction in Ordnance Engineering, which included

N. W. PICKERING

duty at the Naval Gun Factory, Washington, D. C.; the Proving Ground at Indian Head, Md.; and the Bethlehem Steel Company. He then was sent to England to complete the instructional course at Barr Stroud Optical Works, Glasgow, Scotland, and the Whitehead Torpedo Works, Weymouth, England. Following another tour of sea duty given over primarily to gunnery work, he served as chief of Gun Section, Bureau of Ordnance, Navy Department.

Upon completion of this work he was assigned to duty overseas during the World War and at that time visited the large industrial ordnance plants in England and France.

During the World War he was associated with Franklin Farrel, Jr., now chairman of the Farrel-Birmingham board of directors, who, recognizing his executive and administrative abilities, induced him to resign from the Navy and join the Farrel Foundry & Machine Company.

In November, 1919, he started work in the Farrel Roll Department and became, successively, Assistant Manager and Manager of that Department. In February, 1930, he was elected President of the Farrel-Birmingham Company, Inc., with executive direction of the company's three plants at Ansonia and Derby, Conn., and Buffalo, N. Y. Mr. Pickering has his home at Ansonia.

MOHAWK RUBBER CO. HAS OPERATING PROFIT

At the recent annual meeting of the stockholders of the Mohawk Rubber Company, Akron, O., Charles Borland, president, stated that the company during 1931 showed an operating profit of $88,000 compared with an operating loss of $188,714 in previous year. A satisfactory increase in volume of business has been experienced during the first two months of 1932, Mr. Borland said, which represented a gain of 24.8 per cent over the first two months of last year.

Balance sheet as of December 31, 1931, shows total assets of $2,667,583, current assets of $1,192,490, and current liabilities of $139,532.

Watson-Stillman Expand Line

E. A. Stillman, president of the Watson-Stillman Company of Roselle, New Jersey, and president of the Machinery Club of the City of New York, has recently returned from a business trip to England, Germany and France. While in England he obtained the American rights to the Henley straight-through-lead-sheathing presses, also an agreement with Davy Brothers of Sheffield covering the manufacture of Watson-Stillman equipment in England and the manufacture in the United States of certain of Davy Brothers' hydraulic equipment. In German he visited and inspected several plants engaged in the machinery building industry.

February Rubber Shipments

February shipments of crude rubber to the United States from British Malaya amounted to 26,131 tons, compared with 26,956 tons during January. Similar shipments during February, 1931, totaled 26,714 tons.

The United Kingdom and British possessions exported larger quantities, while Japan, the Continent and other countries were sent smaller tonnages in February. Japan's purchases, 4,227 tons last month, compare with 1,538 tons in February, 1931.

New Cabot Agents

Rolls Chemical Company of Buffalo has just been appointed by Godfrey L. Cabot, Inc., of Boston, as their representatives for the sale of all their grades of carbon black in upper New York State.

P. N. Soden & Co., Ltd., of Montreal, Canada, have also been appointed as their representatives in Ontario.

Through this representation users of carbon black in these areas will receive closer and more careful fulfillment of their requirements than ever.

Goodrich Warehouse in Joplin

A factory warehouse for the B. F. Goodrich Rubber Company, serving as a distribution center, both wholesale and retail, for Goodrich tires and other products for the neighboring states, is being established in Joplin, Mo.

Rubber News Around the World

NEW USES FOR RUBBER DEVELOPED IN SINGAPORE

The Singapore Rubber Works, a leading manufacturer of mechanical rubber goods in the Far East, is reported to be focusing its attention upon the development of new uses for rubber particularly suited to the needs of its nearby markets. Tin mining, an important industry in Malaya, has claimed the attention of this company as an industry that offers a considerable number of uses for rubber. To this end rubber lined pipe lines for the carriage of mineral sludge have been developed. The rubber lining is homogeneous with the pipe and increases its life by protecting the steel from the corroding effects of water that has a large percentage of tin ore in suspension. Hose for pumping water and slime, flexible dredge sleeve connections, and rubber liners for chutes, are but other uses for rubber found in the tin mines.

Among certain innovations produced by this Singapore concern is a rubber insulated fireman's helmet which is said to give 100 per cent protection from falling live wires. Gas masks are being turned out for use by the local fire brigade, by gas workers, and for protection in ships' holds and on board tankers.

Of particular interest to the rubber industry in the United States, the Singapore Rubber Works claims to have developed a new practicable rubber flooring. Their Cressonite rubber tiles are said to eliminate the necessity for careful preparation to guard against dampness and corrosion, and the probability of the rubber working loose to form bulges and air pockets. Cressonite rubber tiles are rigid, cementitious tiles to which a very resilient rubber surface is inseparably bonded. They are laid direct on wet concrete or on a bed of wet Portland or other water-cement mortar, and no more expert service is required for the task than that of an ordinary tile or brick layer.

An opportunity is offered for a thorough test of this rubber flooring in that the entire ground floor of Singapore's new terminal railway station has been paved with Cressonite tiles, and the floors of the new General Hospitals at Penang and Malacca are to be tiled with the Singapore Rubber Works' product.

Cressonite rubber bound paint is another product of this company which has been employed on the walls of a stand at a local exposition with very fine color effects. This rubber bound paint can be used to give the effect of wallpaper and tapestry.

Riga Firm Has Fire

The Varonis Indiarubber Works, Riga, Latvia, recently suffered a heavy loss by fire which is reported to have completely destroyed the toy and boot departments together with all machinery and materials.

Rubber Museum in Austria

Announcement comes from Alois Schnek, Rafaelgasse 32, Vienna, Austria, that he is establishing a rubber museum to be devoted to exhibits of crude rubber and its gathering and manufacture, together with rubber products of all kinds. Mr. Schnek has been identified with the rubber industry for 32 years and is a frequent contributor to the European rubber trade press. He states in his announcement that he would be glad to have any objects for exhibit or other materials pertaining to the industry which would lend themselves to museum display.

"Ratnasara" Eliminates Smoking Rubber

A SOLUTION to eliminate the smoking of plantation rubber has been introduced in the Federated Malay States by H. J. C. Kulasingha, a Malayan rubber chemist.

Rubber treated with the solution known as "Ratnasara," is stated to be equal to smoked sheet in all respects and gives a higher tensile strength. "Ratnasara" contains no ingredients injurious to rubber and no special preparations are necessary to treat rubber with the solution.

At the British Industries Fair in London sample sheets of rubber treated with "Ratnasara" were exhibited on the Malayan Government stand. These were shade dried, and it is stated that for this purpose the existing smoke houses can be converted into shade drying sheds without alteration. One ounce of the solution is sufficient to treat an imperial gallon of held latex at a cost of five-sixths of a cent (Straits).

As there is no fire risk in treating rubber with this solution, as in the case of smoking, the high rate of premium demanded for the insurance of smoke houses is obviated.

Native Output Holds Up

The eighth official report on the native rubber industry of the Netherlands East Indies is remarkable in that it states all earlier calculations of the price level below which rubber would become worthless and the native rubber plantations would be abandoned were based on an erroneous assumption. It is pointed out that, even below the price level previously assumed, native rubber output in the Dutch East Indies has remained unchanged at 7,000 to 8,000 tons per month, or approximately 90,000 tons a year. Reading between the lines of the report, it is obvious that no reduction in native production is anticipated. Sales of native rubber, the report adds, entirely depend upon factories being able to continue working. Although some of these factories, particularly at Singapore, have had serious difficulties, they have all been able to reduce working expenses considerably.

FRANCE RAISES TARIFF ON RUBBER PRODUCTS

The new tariff bill now before the French senate and already passed by the chamber of deputies increases the duty on American and Canadian rubber products by 80 per cent. It strikes particularly at rubber boots, shoes, tennis shoes and other rubber footwear.

While terms of the tariff schedule, virtually assured of adoption by the French government, promise to prohibit exportation of American rubber products to France, the development is not viewed here by rubber manufacturers as of tremendous importance.

"While we manufacture a good deal of that kind of merchandise," said a spokesman for the B. F. Goodrich Company, "the facts are that only a negligible quantity goes to France and therefore the imposition of the higher duty there does not alarm us greatly. With respect to tires, the higher tariff will not operate against us because we have our own manufacturing establishment in Colombes, France."

P. W. Litchfield, interviewed in Washington, said that the Goodyear Tire & Rubber Company, although deploring the increased barrier to trade with France, would not be seriously affected.

"It is merely a case of placing a few more inches on a wall that cannot now be scaled," he said.

Netherlands Rubber Union Loss

Netherlands Rubber Union, a large Amsterdam rubber company, reports a loss for 1931 of £120,000, against a loss of £110,000 for 1930. It is stated in the annual report that funds are insufficient to continue operations, and a drastic reorganization is proposed. Shareholders are to be offered profit-sharing certificates in exchange for shares. It is also proposed to make an issue of 200,000 florin (£17,000) shares. The company was floated in 1926 by leading Dutch rubber interests with the object of buying and working up native rubber in the Netherlands East Indies. The company has never been able to pay a dividend.

German Tire Exports, 1931

Exports from Germany of automobile casings during the year 1931 dropped perceptibly. The same decline was noticeable in the case of inner tubes, according to reports of the Department of Commerce.

During the calendar year Germany exported 190,871 automobile casings as compared to 302,122 in the calendar year 1930. Inner tubes exported from Germany during the calendar year 1931 amounted to 141,736 as compared to 244,694 in the same period of 1930. Germany exported 6,872 solid tires during the calendar year 1931 as compared to 6,712 in the same period of 1930.

Germany's best markets appeared to be the Netherlands and Czechoslovakia.

COSTS AND PROFITS ON MALAYAN ESTATES

Statistics compiled from Rickinson's "Rubber Companies Position," for 85 Malayan rubber estate companies, calculated for the fiscal year most closely corresponding to the calendar year 1930, show an average "out-of-pocket expense" of 5.02 pence per pound for rubber produced that year, compared with 6.28 pence per pound for 79 estates in 1929. Dividends paid during 1931 by the 85 estates amounted to only £70,026 against £1,260,848 for 79 estates in 1929. The carry-over and reserve at the end of the 1930 operations was reduced to £1,409,140 for the 85 estates against £1,549,728 at the end of 1929. Only 3,894 acres were planted with rubber by the 85 estates during 1930. The amount realized for 125,980,378 pounds of rubber produced in 1930 was £2,636,484, and these estates as a whole, including revenue from other sources than rubber during the year, operated at a total per pound outlay almost exactly equal to the price received.

Japanese Tire Exports, 1931

Japanese official trade returns show but one general classification for tires, "Gum Tires," the unit of quantity being 100 kin which is equivalent to 132 pounds avoirdupois. By comparison with other official trade returns, the Department of Commerce has found that about three automobile casings are exported for every 100 kin. Using this basis of conversion Japanese tire exports during the calendar year 1931 amounted to 144,816, compared to 148,947 in the same period of 1930.

Eastern Stocks Decreased

Declining tendencies are disclosed by the latest figures on Far Eastern rubber supplies. Dealers' stocks in Singapore and Penang amounted to 51,495 tons at the end of February, compared with 52,723 tons, dry weight basis, at the close of January. Harbor Board Stocks amounted to 5,189 tons, against 7,113 tons at the end of January.

Rubber Stock Quotations

	Last Price		—1932—	
	Mar. 25	Mar. 5	High	Low
Aetna	2½	3	3	1¾
American Hard Rubber	--	—	—	—
Faultless	25	25	25	25
Firestone	12⅛	14	15	12
do. 6% pfd.	53	59	59½	50¾
Fisk	⅛	⅛	⅜	⅛
do. 1st pfd.	⅜	¼	⅞	¼
General	45	45	49¾	49¾
do. pfd.	60	60	—	—
Goodrich	4¼	4⅝	5⅝	3⅞
do. pfd.	14⅞	15	17	12
Goodyear	16	18	18	12⅞
do. 1st pfd.	54½	59½	59½	48
India	4½	4½	7	—
Intercontinental	—	—	—	—
Kelly-Springfield	1⅞	2⅝	2⅝	1
do. 6% pfd.	16½	39⅞	39⅞	16½
Lee	2	2	2¼	2
Mohawk	2	2¼	2½	1
do. pfd.	20	20	—	—
Norwalk	—	1½	—	—
Pirelli	—	—	30⅞	26⅞
Raybestos-Manhattan	9¾	10	11½	9¾
Seiberling	—	3½	4½	3½
do. pfd.	20	20	—	—
Thermoid	2	2	3	2
U. S. Rubber	4⅝	5¼	5¾	3½
do. pfd.	8⅞	10⅞	10⅞	7½

Names in the News

Blandin Honored

J. J. BLANDIN, manager of the Crude Rubber Purchasing Division, of the Goodyear Tire and Rubber Company, Akron, O., was recently awarded the 20-year gold service pin of his company. His experience constitutes one of the most interesting careers in the rubber industry.

When Blandin entered Goodyear's employ, Goodyear's organization in the Far East did not exist. Now there are two organizations there, the Goodyear Orient Company and the Goodyear Plantations Company. The Orient Company handles crude rubber purchasing and has headquarters in Singapore and Colombo. The Plantations Company covers the three Goodyear plantations in Sumatra and the one in the Philippine

Islands. Blandin is in charge of these as well as a buying organization in London.

He attended the U. S. Naval Academy, but being of an adventurous nature he decided to accept employment with the Continental Rubber Company which was operating in Mexico. All went well until a revolution broke out in the country and he and his fellow employes were loaded into a box car and shipped out of the country.

When he first applied for work at Goodyear, he was given a position as assistant foreman of the rubber washing room. That was on February 26, 1912.

His experience in Mexico proved valuable to him and the following year, 1913, he became assistant to L. G. Odell, then manager of Crude Rubber Purchasing.

Shortly after the beginning of the World War it became necessary to have a buying representative in Singapore and Blandin was sent to the post. Except for a few periods of leave, he remained there until 1922.

Much was accomplished by Blandin during that eight years in the Far East. He personally selected the land and with Odell supervised the clearing of jungle and planting of rubber trees of what is now Dolok Merangir, Goodyear's oldest rubber plantation. He and Odell established an efficient buying organization.

Upon his return to Akron, Blandin again was assistant to Odell. He was loaned to the United States government in 1923 when the Department of Commerce was investigating the world rubber situation. He served for the duration of the investigation.

Odell resigned in 1925 and Blandin was his logical successor as manager of the Crude Rubber Purchasing division. Since that time the division has grown. Dolok Merangir was brought to full production. Wingfoot Plantation was purchased and is rapidly being cleared and planted. And more recently Pathfinder Plantation was obtained, a great stretch of virgin jungle, which some day will be producing rubber for Goodyear tires.

SIR ERIC GEDDES, chairman of the board of directors of the Dunlop Rubber Company, Ltd., arrived in the United States recently and paid a business visit to Cleveland.

S. B. ROBERTSON, vice-president of B. F. Goodrich Company, returned to Akron February 28, after an extensive trip to the Pacific coast, where he conferred with Goodrich officials.

CHARLES C. GOODRICH, member of the board of directors of B. F. Goodrich Company, a member of the Maine legislature and son of the founder of the company, has been seriously ill at his home in York, Me., but is reported to be greatly improved. Mr. Goodrich is 60 years old but has been active in the affairs of his company.

HARRY E. BLYTHE, assistant to P. W. Litchfield, president of the Goodyear Tire and Rubber Company, recently spoke on the "1932 Sales Outlook" before the Foremen's Club dinner at the Goodyear plant.

S. N. FARMER, of the India Tire and Rubber Company and HORACE J. WILLIAMS, of the Firestone Tire and Rubber Company, have been elected president and secretary respectively, of the recently organized Harvard Business School Club of Akron, O. The club is composed of alumni of the Harvard graduate school of business administration.

DR. HOWARD E. FRITZ, manager of chemical sales, B. F. Goodrich Company, addressed the Goodrich engineering class at Akron recently, on the subject of the necessity for the continuous improvement in quality of rubber products. C. T. BUTLER was chairman at the meeting.

FRANK J. WILSON, of the Wilson Rubber Company, Canton, O., recently spoke before the Rotary Club, at Minerva, O., relative to his late trip to England, where he established a factory branch.

French Elastic Fabric Industry

The French elastic fabric industry has a total yearly production valued at 150 to 200 million francs, according to Department of Commerce reports. Rubber thread used by this industry is reported in part from the United States. Exports of elastic fabric from France have been as follows:

	Kilos	*France*
1928	189,100	11,628,000
1929	244,800	15,494,000
1930	205,000	13,522,000

About 10 per cent of the 1928 exports and 20 per cent of the 1929 exports went to the United States. In 1929, Belgium took about 25 per cent of the total and the United Kingdom over 20 per cent, the balance going mostly to European countries and Argentina. Trade reports that the total volume of business of some of the French manufacturers has fallen off 75 per cent, and that the average decrease is 50 per cent.

French imports of elastic fabric in the above mentioned years have been as follows:

	Kilos	*Francs*
1928	13,500	1,706,000
1929	15,200	1,745,000
1930	15,200	1,599,000

INQUIRIES FROM READERS

(*Address replies to the Editor,* THE RUBBER AGE, *250 West 57th Street, New York City, N. Y., mentioning inquiry number.*)

Manufacturing Facilities Available

A mold shop and small manufacturing plant, in a position to handle the manufacture of molded articles for any small rubber company desiring such facilities, would like to get in touch with interested parties. Inquiry 31032.

Consulting Rubber Technologist

PRACTICAL

Twenty years' experience with the largest and most successful companies in the country

Physical and Chemical Testing
Special facilities for abrasion and quick age tests

Expert Advice to Correct Factory Trouble

New Processes and Formulas Developed

R. R. Olin Laboratories
P. O. Box 372, AKRON, OHIO
Telephones: Sherwood 3724; Franklin 8551

CLASSIFIED ADVERTISING

Five cents a word, minimum charge $2.00, payable in advance.
Address replies to Box Numbers.
THE RUBBER AGE
250 West 57th St., New York City

HELP WANTED

WANTED—Working foreman for a small mechanical rubber goods plant. A man accustomed to handling calender, mill and tubing machine. This is an excellent opportunity for the right man. Replies must state age, and names of former employers. Address Box 661, THE RUBBER AGE.

HELP WANTED—A practical man with wide experience and thorough knowledge in manufacturing of toy balloons. Must be able to take entire supervision of erection of a factory in England. Write fully past experience, full particulars and salary required. Address Box 660, THE RUBBER AGE.

POSITION WANTED

SALES
RUBBER TECHNOLOGIST

Experience in sales and service of chemicals to rubber manufacturers. Possess thorough knowledge hard and soft rubber manufacture. Far Eastern experience. Past connection seven years with one of country's largest chemical houses as technical representative. Thoroughly familiar with all plants in Eastern United States and Canada. Have large following. Location immaterial. Age thirty-nine. Married. Excellent credentials. Reimbursement secondary to opportunity. Address Box 662, THE RUBBER AGE.

GRADUATE CHEMIST, with wide experience in rubber industry, especially mechanical goods, tire accessories, drug sundries and latex. Competent to manage small factory, laboratory or manufacturing unit. Six years with present company but desires change. Age 28, married. Address Box 658, THE RUBBER AGE.

EQUIPMENT WANTED

WANTED: One 6" or 8" high speed Tread Tubing Machine. Must be in first class condition. One late type tread die head. Furnish full details capacity, pounds per hour, h. p. required, length opening in die head. Quote lowest cash price. Address Box 659, THE RUBBER AGE.

SURPLUS RAW MATERIALS

WE PURCHASE surplus and discontinued stocks of Chemicals, Pigments, Accelerators, Solvents and Raw Materials, regardless of quality or condition. Send us a complete list of such dead stocks, whereupon we will make you a cash offer.

BARCLAY CHEMICAL COMPANY
154 Chambers Street, New York City

CASH FOR YOUR SURPLUS AND CLOSE OUT—Rubber Goods, Chemicals, Colors, Pigments, Oils, Waxes, Glues, Accelerators, Metals. Any quanity. Any condition. Also Wastes, By-Products, Residues of all kinds.

CHEMICAL SERVICE CORP.,
36 Park Row, New York, N. Y

Let me take care of your
CHEMICAL WORK
and
MANUFACTURING
PROBLEMS
on a monthly fee basis.

FREDERICK J. MAYWALD
Rubber Chemist
305 Hoboken Road
Carlstadt New Jersey

INTERNATIONAL PULP CO., *41 Park Row, New York, N. Y.*
SOLE PRODUCERS OF PURE **ASBESTINE** SPECIALLY PREPARED FOR USE IN RUBBER
Covered and Protected by Letters Patent Registered at U. S. Patent Office, Washington, D. C.
LIBERAL WORKING SAMPLE FURNISHED FREE

LATE MARKET PRICES

RUBBER—COTTONS AND FABRICS—CHEMICALS

NEW YORK, MARCH 21, 1932

Crude Rubber

COLLAPSE of the negotiations between the British and Dutch governmental representatives on the subject of restriction precipitated rubber to the lowest level yet reached in the history of trading in the commodity. At this writing price levels for spot have declined to a three-cent basis, but the sentiment of the trade seems to be that prices will firm and the general position of rubber will improve now that definite declarations have been made regarding future restriction plans and the element of uncertainty in the market has been eliminated. The statistical position of rubber during the fortnight, however, has not improved and stocks continue abnormally high. Consumption for March is reported to show a decided falling off.

Prices quoted on the New York outside market at the close of March 21, were as follows:

Plantations—			
Ribbed Smoked Sheets—			
Spot-March	.03	@	.03⅛
April	.03	@	.03⅛
May-June	.03¼	@	.03¼
First Latex, crepe spot	.04⅜	@	.04½
Amber Crepe No. 2	—	@	.03
Amber Crepe, No. 3	—	@	.02⅞
Amber Crepe, No. 4	—	@	.02¾
Brown Crepe, Clean thin	—	@	.02⅞
Brown Crepe, rolled	—	@	.02¾
Liquid Latex, per gal.	.70	@	.80
Paras—			
Up-river, fine	—	@	.05
Up-river, coarse	Nominal		
Acre Bolivian, fine	—	@	.05½
Caucho Ball, Upper	.02½	@	.03
Centrals—			
Central scrap	.04	@	—
Esmeraldas	.04	@	—
Balata—			
Block, Ciudad	—	@	.18

LONDON MARKET

Standard Ribbed Smoked Sheets—Buyers

March	1¾	@	1⅞d
April	1¾	@	1⅞d
May	1⅞	@	2d

SINGAPORE MARKET

Standard Ribbed Smoked Sheets—Sellers

Spot	1½	@	1⅝d

Daily closing prices and sales on the Rubber Exchange of New York are given in the table below:

Reclaimed Rubber

In view of the continued decline in crude rubber levels the prices on reclaim have necessarily gone lower but still maintain a surprisingly comparable position with crude. A reasonable demand for reclaim under the prevailing conditions continues. Late prices are quoted as follows:

High Tensile				
Super-Reclaim Black	lb.	.05	@	.05¼
High Tensile Red	lb.	.05	@	.05¼
Shoe				
Unwashed	lb.	.05	@	.05¼
Washed	lb.	.05¾	@	.06
Tube				
No. 1 (Floating)	lb.	—	@	.06½
No. 2 (Compounded)	lb.	.04¾	@	.05
Tires				
Black	lb.	.03¾	@	.04
Black, selected tires	lb.	.04	@	.04¼
Dark Gray		.05	@	.05¼
Light Gray	lb.	.05½	@	.06
White	lb.	.05½	@	.05¾
Truck, Heavy Gravity	lb.	.05	@	.05¼
Truck, Light Gravity	lb.	.05¼	@	.05½
Miscellaneous				
Mechanical blends	lb.	.03	@	.03½

Scrap Rubber

Scrap prices have declined in line with reclaim, and while the demands from reclaimers are still seasonally fair, accumulations of scrap stock are becoming increasingly difficult in view of present low price levels. A revision of scrap classifications are being advocated and a reduction in railway freight rates is being asked. Late prices follow:

(Prices to Consumer)

Auto tire peelings	ton	18.00	@20.00
Mixed auto	ton	7.50	@ 8.75
Bicycle tires	ton	5.00	@ 6.00
Clean solid truck tires	ton	24.00	@26.50
Boots and shoes	ton	15.00	@17.50
Arctics, untrimmed	ton	10.00	@12.50
Inner tubes, No. 1	lb.	.02⅝	@ .02⅞
Inner tubes, No. 2, compounded	lb.	.01⅜	@ .01½
Inner Tubes, Red	cwt.	1.40	@ 1.50
Air Brake Hose	ton	9.00	@10.00
Rubber Hose	ton	8.50	@ 9.00

Cotton

NO SIGNIFICANT change has occurred in the cotton situation during the last fortnight. Prices have generally remained constant with late quotations showing a slight decline from previously reported levels. Sentiment, influenced by political uncertainty and a falling off in spot demand, has become somewhat bearish. On the other hand, the aggregate of home consumption and exports for the past seven months have been 15 per cent greater than for the same period last year.

High, low and closing prices on the New York Cotton Exchange, as of March 21, follow:

	High	Low	Close Mar. 21	Close Mar. 4
Mar.	6.69	6.59	6.68	6.98
May	6.77	6.67	6.75	7.10
July	6.94	6.83	6.92	7.27

Tire Fabrics

A readjustment in price levels on tire fabrics, due to lack of buying strength, has brought about a general reduction in most constructions. Late prices follow:

(Prices Net at the Mill)

CORD

Peeler, carded, 23/4/3	lb.	.24	@	.24¼
Peeler, carded, 23/5/3	lb.	.23	@	.23¼
Peeler, carded, 13/3/3	lb.	.20	@	.20¼
Peeler, carded, 15/3/3	lb.	.21	@	.21¼
Egyptian, carded, 23/5/3	lb.	.35	@	.35½
Egyptian, combed, 23/5/3	lb.	.40	@	.40½

CHAFERS

Carded, American, 8 oz.	lb.	.18	@	.19
Carded, American, 10 oz.	lb.	.18	@	.19
Carded, American, 12 oz.	lb.	.18	@	.19
Carded, American, 14 oz.	lb.	.17	@	.18

LENO BREAKER

Carded, American, 8¼ oz.	lb.	.18	@	.22
Carded, American, 10¼ oz.	lb.	.18	@	.22

SQUARE WOVEN

Carded, American, 17¼ oz. 23-11 ply	lb.	.23	@	.24
Carded, American, 17¼ oz. 10 ply	lb.	.17	@	.17½

Sheetings

No changes in sheeting prices have been registered during the fortnight and the market continues dull. Quotations are maintained as follows:

40-inch, 2.50-yard	yd.	.05⅝	@	.05¾
40-inch, 2.85-yard	yd.	.05¼	@	.05¼
40-inch, 3.15-yard	yd.	.03⅜	@	.03½
40-inch, 3.60-yard	yd.	—	@	.04¾
40-inch, 3.75-yard	yd.	—	@	.04¼
40-inch, 4.25-yard	yd.	—	@	.03¾

Ducks

Prices on leading duck constructions remain unchange despite a dull market. Late prices follow:

Enameling	lb.	.16¾	@	.17¾
Belting and Hose	lb.	.18	@	.18½
Single filling	lb.	.08	@	.08¼
Double filling	lb.	.09½	@	.09¾

Closing Prices on Rubber Exchange of New York, Inc.

No. 1 Standard Contract of 10 Tons

FROM MARCH 7 TO MARCH 19, 1932

		Spot	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Sales
March	7	3.57	3.56	3.62	3.68	3.74	3.80	3.86	3.93	4.00	4.07	4.15	4.24	4.33	43
	8	3.56	3.56	3.60	3.64	3.71	3.78	3.85	3.92	3.98	4.04	4.10	4.19	4.28	79
	9	3.63	3.60	3.60	3.60	3.66	3.74	3.81	3.88	3.95	3.99	4.04	4.14	4.23	70
	10	3.55	3.52	3.52	3.60	3.67	3.74	3.80	3.87	3.93	3.99	4.05	4.14	4.23	27
	11	3.65	3.71	3.70	3.70	3.77	3.85	3.90	3.96	4.02	4.08	4.13	4.22	4.31	137
	12	3.65	3.65	3.62	3.62	3.69	3.77	3.85	3.93	3.99	4.04	4.09	4.18	4.27	12
	14	3.50	3.44	3.44	3.44	3.51	3.58	3.65	3.73	3.78	3.83	3.88	3.97	4.06	89
	15	3.40	3.42	3.40	3.40	3.45	3.50	3.58	3.66	3.72	3.78	3.83	3.92	4.01	46
	16	3.35	3.39	3.36	3.36	3.43	3.50	3.55	3.60	3.65	3.70	3.75	3.84	3.93	59
	17	3.25	3.35	3.34	3.34	3.36	3.39	3.44	3.49	3.55	3.61	3.67	3.76	3.85	150
	18	3.25	3.30	3.28	3.28	3.32	3.36	3.41	3.47	3.52	3.58	3.64	3.70	3.79	34
	19	3.25	3.30	3.27	3.27	3.31	3.36	3.41	3.46	3.52	3.58	3.65	3.72	3.80	34
	21	3.10	3.11	3.06	3.06	3.10	3.15	3.20	3.25	3.32	3.39	3.46	3.53	3.61	84

CHEMICALS

THE market for rubber chemicals has remained abnormally quiet during the last fortnight, with movements at low ebb and much below the usual seasonal demand. The spurt in manufacturing activities evidenced in February has not been generally maintained and a falling off in orders has been reported. No changes in price levels for the more common chemical materials has been noted. Prices remain unchanged as given below:

ACCELERATORS

Organic				
A-1	lb.	.24	@	.27
A-5-10	lb.	.33	@	.36
A-7	lb.	.55	@	.59
A-11	lb.	.62	@	.66
A-16	lb.	.57	@	.61
A-19	lb.	.58	@	.62
A-20	lb.	.64	@	.68
A-32	lb.	.80	@	.95
Aldehyde ammonia, crystals	lb.	.65	@	.70
Altax	lb.			
Captax	lb			
Cryiene	lb.	.55	@	.65
paste	lb.	.45	@	.55
Di-Ortho-Tolyguanidine	lb.	.42	@	.44½
Diphenylguanidine	lb.	.30	@	.32½
Ethylidene aniline	lb.	.45	@	.47½
Formaldehyde aniline	lb.	.37½	@	.40
Heptene	lb.	.40	@	—
Hexamethylene-tetramine	lb.	.58½	@	.61
Lithex	lb.	.18	@	.20
Methylenedianiline	lb.	.37½	@	.40
Monex	lb.	3.25	@	—
Oxynone	lb.	.68	@	.80
Phenex	lb.	.50	@	.55
R & H 40	lb.	.40	@	.41
R & H 50	lb.	.40	@	.41
R & H 397	lb.	.75	@	.76
R-2	lb.	1.95	@	2.15
Safex	lb.	1.20	@	1.25
SPDX	lb.	.75	@	—
Super-Sulphur No. 1	lb.			
No. 2	lb.			
Tensilac, No. 39	lb.	.40	@	.42½
Tensilac, No. 41	lb.	.50	@	.52½
Thermio F	lb.	.50	@	.55
Thiocarbanilid, drums	lb.	.20	@	.22
TMTT	lb.	3.00	@	3.25
Trimene	lb.	.75	@	—
base	lb.	1.20	@	—
Triphenylguanidine	lb.	.58	@	.60
Tuads	lb.			
Ureka	lb.	.75	@	1.00
Vulcanex	lb.			
Vulcone	lb.			
Vulcanol	lb.			
Z-88-P	lb.	.50	@	.60
Zimate	lb.			
Inorganic				
Lead, sublimed blue	lb.	.08¼	@	—
Lead, white	lb.	.08½	@	.08¾
Litharge, domestic	lb.	.06¼	@	.07
Magnesia, calcined, light	per 100 lb.	5.35	@	5.45
heavy	per 100 lb.	3.65	@	3.75

COLORS

Blacks (See Compounding Materials)				
Blues				
Prussian	lb.	.35	@	.36
Ultramarine	lb.	.06	@	.32
Browns				
Sienna, Italian	lb.	.05½	@	.12½
Umber, Turkey	lb.	.04½	@	.07
Greens				
Chrome, light	lb.	.30	@	.32
medium	lb.	.31	@	.33
dark	lb.	.34	@	.36
Chromium Oxide, bbl.	lb.	.34½	@	.35½
Reds				
Antimony crimson, 15/17	lb.	.40	@	.44
sulfur, free	lb.	.56	@	.66
golden, 15/17 F.S.	lb.	.20	@	.25
Indian English	lb.	.08	@	.11
Domestic (Maroon)	lb.	.11	@	—
Red oxide, pure	lb.	.10	@	.12
Rub-Er-Red, f.o.b. Easton	lb.	.08¾	@	—
Whites				
Lithopone, Albalith	lb.	.05¼	@	.05¾
Lithopone, Azolith	lb.	.05¼	@	.05¾
Titanium oxide	lb.	.21	@	—
Titanox B	lb.	.06½	@	.07
Titanox C	lb.	.06½	@	.07
Zinc Oxide—American Process				
American Azo:				
ZZZ (lead free)	lb.	.05¾	@	.06
ZZ (leaded)	lb.	.05½	@	.05¾
Horsehead Brand:				
Special	lb.	.05¾	@	.06
XX Green	lb.	.05¾	@	.06
XX Red, lead free	lb.	.05¾	@	.06
Kadox, black label	lb.	.09⅝	@	.09⅞
blue label	lb.	.08⅝	@	.08⅞
red label	lb.	.07¼	@	.07½
St. Joe, black label	lb.	.05¾	@	.06
green label	lb.	.05¾	@	.06
red label	lb.	.05¾	@	.06
Zinc Oxide—French Process				
Anaconda, lead free	lb.	.05¾	@	.06
Anaconda, selected lead free	lb.	.06¼	@	.06½
White seal, bbls.	lb.	.10⅛	@	.10⅜
Green seal	lb.	.09⅝	@	.09⅞
Red seal	lb.	.08⅝	@	.08⅞
Yellows				
Chrome	lb.	.16½	@	.17
Ocher, domestic	lb.	.01⅝	@	.02

BLACKS

Arrow "Aerfloted"				
c.l. f.o.b. works, bags	lb.	.03	@	—
c.l. f.o.b. work, cases	lb.	.04½	@	—
less c.l. f.o.b. works	lb.	.05½	@	.07
Bone, powdered	lb.	.05½	@	.12½
Carbon, compressed	lb.	.03	@	.07
uncompressed	lb.	.03	@	.07
"Certified," Cabot				
c.l. f.o.b. works, bags	lb.	.03	@	—
c.l. f.o.b. works, cases	lb.	.04½	@	—
less c.l. f.o.b. works	lb.	.05½	@	.07
"Disperso" f.o.b. La.	lb.	.031	@	.071
f.o.b. Texas	lb.	.03	@	.07
Drop, bbls.	lb.	.05½	@	.14
"Excello," compressed	lb.	.04	@	.08
"Fumonex"	lb.	.02½	@	.06
"Gastex," f.o.b. Texas	lb.	.02½	@	.04¼
Lampblack	lb.	.07	@	.10
"Micronex"				
c.l. f.o.b. works, bags	lb.	.03	@	—
c.l. f.o.b. works, cases	lb.	.04½	@	—
less c.l. f.o.b. works	lb.	.05½	@	.07
"Supreme"	lb.	.03	@	.07
Thermatomic—"P 33"	lb.	—	@	—
"Thermax"	lb.	—	@	—
United, "Dixie" and "Kosmos"				
c.l. f.o.b. works, bags	lb.	.03	@	—
c.l. f.o.b. works, cases	lb.	.04½	@	—
less c.l. f.o.b. works	lb.	.05½	@	.07
"Velvetex"	lb.	.02	@	.05

COMPOUNDING MATERIALS

Aluminum Flake	ton	21.85	@	24.50
Ammonia carbonate, lump	lb.	.10½	@	.12
Asbestine	ton	13.40	@	14.00
Barium carbonate	ton	56.50	@	57.00
Barium Dust	lb.	.05	@	.06
Barytes southern off-color	ton	12.00	@	18.00
Western prime white	ton	23.00	@	—
imported	ton	27.00	@	36.00
Basofor	lb.	.04½	@	—
Bentonite	lb.	.02	@	.03
Blanc fixe dry f.o.b. works	ton	75.00	@	90.00
Carrara filler	lb.	.01¾	@	.02
Catalpo (fact.)	lb.	.02	@	—
Chalk, precipitated				
Suprex white, extra lt.	ton	60.00	@	70.00
heavy	ton	45.00	@	55.00
Clay, Kaolin, domestic	ton	8.00	@	9.00
Aerfloted, Suprex	ton	6.50	@	8.00
Colloidal	lb.	.05	@	.08
Congaree	ton	9.00	@	—
Dark Blue Ridge	ton			
Dixie	ton			
Langford	ton			
Lexington	ton	10.00	@	22.00
Par	ton			
Tensulite		15.00	@	—
Glues, extra white	lb.	.20	@	.25
medium white	lb.	.16	@	.20
Kalite No. 1	ton	30.00	@	60.00
Kalite No. 3	ton	40.00	@	70.00
Magnesia, carbonate	lb.	.08¾	@	.11
Mica	lb.	.04½	@	—
Rotten Stone (powdered)	lb.	.02	@	.05
Soapstone, powdered	ton	15.00	@	22.00
Starch, powdered	cwt.	—	@	2.57
Talc, domestic	ton	12.00	@	15.00
Pyrax A	ton			
Whiting, commercial	cwt.	.85	@	1.00
English cliffstone	cwt.	1.75	@	2.00
Quaker	ton			
Superfine	ton	10.00	@	12.00
Sussex	ton			
Witco	ton	20.00	@	—
Zinc Carbonate	lb.	.09½	@	.10½
Zinc Stearate	lb.	.13½	@	.22

MINERAL RUBBER

Genasco (factory	ton	40.00	@	42.00
Granulated M. R.	ton			
Hard Hydrocarbon	ton			
Parmr, solid	ton	28.00	@	48.00
Pioneer. MR, sclid	ton	40.00	@	42.00
Pioneer-granulated	ton	50.00	@	52.00
R & H Hydro-Carbon	ton	27.05	@	29.00

SOFTENERS

Acids				
Nitric, 36 degrees	cwt.	5.00	@	5.25
Sulfuric, 66 degrees	cwt.	1.60	@	1.95
Tartaric, crystals	lb.	—	@	.26½
Acids, Fatty				
Laurex	lb.	.15	@	.16
Stearex	lb.	.13	@	.17
Stearic, double pressed	lb.	.17	@	.22
Alkalies				
Caustic soda, 76%	cwt.	2.90	@	—
Soda ash, 58% C.L.	cwt.	1.17½	@	—
Oils				
Corn, refined, bbls.	lb.	.07	@	.08¾
Cottonseed, crule		—	@	.04½
Cycline	gal.	.27	@	.34
Degras (c.l. 100 bbls.)	lb.	.03¾	@	—
Less c.l. (10-25 bbls.)	lb.	.04	@	—
Lots less than 10 bbls.	lb.	.04¼	@	.04½
Fluxrite	lb.	.05½	@	.06½
Palm Lagos	lb.	.04	@	.05
Niger	lb.	.03½	@	.04
Para-Flux	gal.	.17	@	—
Petrolatum, white	lb.	.08	@	.08½
Pigmentaroil	gal.	.18	@	.23
Pine, steam distilled	gal.	.54	@	.61
destructively distilled	gal.	.54	@	.55
Witco Palm Oil	lb.	.07½	@	—
Witco Softener (f.o.b. wks.)	lb.	.02	@	—
Resins and Pitches				
Pitch, Burgundy	lb.	.06½	@	.07½
coal tar	gal.	.05½	@	.06
pine, 200 lb. gr. wt.	bbl.	7.00	@	—
Rosin, grade K, 280 lb.	bbl.	—	@	4.60
Pigmentar	gal.	.18	@	.23
Tar Retort, 50 gal.	bbl.	13.50	@	15.00
Solvents				
Acetone, pure	lb.	—	@	.10
Alcohol, denatured, No. 1 bbls.	gal.	.28	@	.29
Benzol, 90%	gal.	.20	@	.21
Carbon, bisulfide	lb.	.05½	@	.06¼
Carbon, tetrachloride	lb.	.06¼	@	.07
Dryolene (f.o.b. Okla.)	gal.	.10	@	.10½
Gasoline, steel bbls.	gal.	.16	@	—
Naphtha, solvent	gal.	.26	@	.28
Rub-Sol (f.o.b. Okla.)	gal.	.09	@	—
Turpentine, spirits	gal.	—	@	.37¼
wood	gal.	—	@	.40
destructively distilled	gal.	.35	@	—
Waxes				
Beeswax, white	lb.	.34	@	.36
Carnauba	lb.	.26	@	.28
Ceresin, white	lb.	.10	@	.11
Montan, crude	lb.	.06½	@	.07
Ozokerite, black	lb.	.24	@	.25
green	lb.	.26	@	.30
Paraffin (c.l.—f.o.b. N. Y.)				
Yellow crude scale	lb.	.02½	@	—
White crude scale 124/126	lb.	.02½	@	—
Refned, 125/127	lb.	.03¾	@	—
Refined, 128/130	lb.	.03¾	@	—
Refined, 135/137	lb.	.05¼	@	—
Refined, 138/140	lb.	.07¼	@	—

ANTI-OXIDANTS

AgeRite, Gel	lb.			
Powder	lb.			
Resin	lb.			
White	lb.			
Albasan	lb.	.70	@	.75
Antox	lb.			
B-L-E	lb.	.57	@	.60
Neozone	lb.			
Oxynone	lb.	.68	@	.80
Resistox	lb.	.54	@	.57
Retardex	lb.	.35	@	.40
Stabilite	lb.	.57	@	.62
Stabilite Alba	lb.	.70	@	.75
VGB	lb.	.55	@	.66

SPECIALTIES

Aromatics—Rodo	lb.			
Sunproof	lb.	.35	@	.37½
Sponge Paste	lb.	—	@	.30
Tonox	lb.	.56	@	.60

SUBSTITUTES

Black	lb.	.07	@	.09
White	lb.	.08	@	.14
Brown	lb.	.07	@	.11

VULCANIZING INGREDIENTS

Sulfur Chloride (drums)	lb.	.03½	@	.04½
Sulfur flour,				
Ref'n'd, 100% pure (bags)	cwt.	2.40	@	2.75
Commercial (bags	cwt.	1.75	@	2.10
Telloy	lb.			
Vandex	lb.			

A Section Devoted to Listings of Leading Producers and Distributors of Raw Materials, Machinery and Equipment, and Supplies for the Rubber Industry.

The Market Place

Chemicals and Compounding Materials — Machinery and Equipment—Crude, Reclaimed and Scrap Rubber—Fabrics—Rubber Products — Consulting Engineers.

Chemicals and Compounding Materials —

ACCELERATORS
Triphenylguanidine
Para-Nitrosodimethylaniline
Thiocarbanilide
National Aniline & Chemical Company, Inc.
40 Rector St. New York City

CARBON BLACK— *Aerfloted*
Arrow Black for rubber compounding. Standard for grit-free uniformity.
J. M. Huber, Inc.
460 West 34th St. New York

CHEMICALS and compounding ingredients; Clay, Whiting, Accelerators, Mineral Rubber.
R. T. Vanderbilt Co.
230 Park Ave. New York City

ACCELERATORS
A-7 A-11 A-16 A-19 A-20 A-32 Z-88
A-5-10, DPG, THIO
RESISTOX, OXYNONE
The RUBBER SERVICE LABORATORIES CO.
611 Peoples Savings & Trust Bldg.
Akron, Ohio

CARBON BLACK
SUPREME—*the up-to-date standard for rubber*
Imperial Oil & Gas Products Co.
Union Bank Bldg., Pittsburgh, Pa.

CHEMICALS and Mineral Ingredients—Whiting, Clay, Talc, Barytes, Colors. Heavy Calcined Magnesia. Carbonate of Magnesia, Pumice Stone.
Standard Since 1890
Whittaker, Clark & Daniels, Inc.
245 Front St., New York

ALUMINUM FLAKE
"The Standard for 24 Years"
REINFORCES—TOUGHENS
Uniform—Pure—Fine—Low S. G.
THE ALUMINUM FLAKE CO.
AKRON, OHIO

CARBON BLACK
DIXIE—KOSMOS—TRIANGLE
United Carbon Company
Manufacturers 1/3 the World's Supply
Chicago, New York, San Francisco, Akron, Charleston, W. Va.

CHEMICALS and COLORS
for all classes of mixing and cure. Complete rubber laboratory service for our customers.
Wishnick-Tumpeer, Inc.
New York Chicago Cleveland Boston

ANTIMONY Pentasulphide, golden and crimson, very fine, pure.
Rare Metal Products Co.
Belleville, N. J.
Direct Factory Representation

CATALPO—The universal and standard rubber pigment now being used in treads, solids, tubes, carcass frictions, etc.
Moore & Munger
33 Rector Street, New York City

COLLOIDAL SULPHUR
COLLOIDAL ZINC OXIDE
COLLOIDAL COLORS
Heveatex Corporation
67 Maplewood St., Malden, Mass.
Offices in New York, Akron, Chicago

ASBESTINE—Specially prepared for use in Rubber. Send for liberal working samples.
SOLE PRODUCERS
International Pulp Co.
41 Park Row New York City

CHEMICALS—A line of Quality materials for the Rubber Industry—Softeners—Accelerators—Solvents.
William Cooper & Nephews, Inc.
1909 Clifton Ave. Chicago, Ill.
AKRON MANAGER
R. A. SPERRY 134 E. Miller Ave.

COLORS—*for Rubber*
Fine organic colors—*Reds, Blues, Oranges, Violets, Greens*—or any shade to meet your requirements.
Ansbacher-Siegle Corporation
Rosebank, Staten Island, N. Y.
820 So. Clinton St., Chicago, Ill.
Agents in Principal Cities

CARBON BLACK—*Micronex*
the world's standard gas black, universally known as the "King of Rubber Pigments."
Binney & Smith Co.
41 East 42nd St. New York City

CHEMICALS—COLORS
Ingredients: Barytes, Bentonite, Clays, Talcs, Whiting
Hammill & Gillespie, Inc.
Est. 1848
225 Broadway New York

COLORS
BRILLIANT ORGANIC DYES; PERMANENT, NON-BLEEDING, LOW COST
For All Cures
The RUBBER SERVICE LABORATORIES CO.
611 Peoples Savings & Trust Bldg.
Akron, Ohio

CABOT CERTIFIED CARBON BLACK
Godfrey L. Cabot, Inc.
Manufacturers for fifty years
940 Old South Bldg., Boston, Mass.
612 Metropolitan Bldg., Akron, O.

CHEMICALS

For Rubber	For Industry Generally	
Accelerators	*Acids*	*Latex*
Antioxidants	*Oil of Myrbane*	*Lotol*
Specialties	*Aniline Oil*	*Dispersions*

The Naugatuck Chemical Co.
1790 BROADWAY NEW YORK

CUMAR—Paracumarone Resin.
A neutral gum for rubber compounding.
Samples and prices on request.
The Barrett Company
40 Rector St. New York City

THE MARKET PLACE Section Continued on Next Page

A Section Devoted to Listings of Leading Producers and Distributors of Raw Materials, Machinery and Equipment, and Supplies for the Rubber Industry.

The Market Place

Chemicals and Compounding Materials — Machinery and Equipment—Crude, Reclaimed and Scrap Rubber—Fabrics—Rubber Products — Consulting Engineers.

Chemical and Compounding Materials [continued]

DEGRAS — Wool Grease
NO BETTER OR CHEAPER SOFTENER
Does Not Oxidize or Discolor
W. L. Montgomery & Co.
10 High St. Boston, Mass.

NAPHTHAS
Dipped Goods Naphthas
Rubber Solvent Gasolines
Tank Cars of 4, 6 or 8000 gal. capacity
Anderson-Prichard Oil Corp.
Oklahoma City Oklahoma

STEARIC ACID
Specially Prepared for the Rubber Industry
A. GROSS & CO.
Factory—Newark, N. J.
Sales Office—122 East 42nd St., New York

DPG — DOTG
Sulphur
American Cyanamid Co.
535 Fifth Avenue New York

PARA-FLUX
The Universal Softener—Adaptable, Uniform, Improves Quality—Economical.
The C. P. Hall Co.
Central Depositors Bank Bldg.
Akron, Ohio

SULPHUR—Pioneer Brand
A high quality Sulphur of *Known Reliability*
St. Louis Sulphur & Chem. Co.
St. Louis Missouri
Wishnick-Tumpeer, Inc., Selling Agents

DU PONT Rubber Chemicals
DU PONT RUBBER COLORS
DU PONT ACCELERATORS
DU PONT ANTI-OXIDANTS
E. I. du Pont de Nemours & Co., Inc.
RUBBER CHEMICALS SECTION
WILMINGTON, DELAWARE

RED OXIDE —A special-grinding, guaranteed uniform in color and quality.
Joseph A. McNulty
114 Liberty St. New York City

WHITING & PARIS WHITE
manufactured from *Genuine English Chalk* and *Cliffstone*—no adulterations.
Southwark Mfg. Co.
Camden New Jersey

FACTICE—Prevents blooming, makes colors fast and a smoother batch.
Stamford Rubber Supply Co.
Stamford, Conn.

RUBBER SUBSTITUTES
White, brown and black.
Carter Bell Mfg. Co.
150 Nassau St. New York

ZINC OXIDES
Red, White & Green Seal (French Process)
Selected and Lead Free
ANACONDA
Super Pure, made from Anaconda Electrolytic Zinc
Anaconda Zinc Oxide Dept. of I. L. R. Co.
East Chicago, Ind. New York, N. Y.
Akron, Ohio

GASTEX
Reinforcing Black—Improves ageing properties of rubber—Does not retard rate of cure.
General Atlas Carbon Co.
60 Wall St., New York

SOFTENERS-PIGMENTAR
Improves dispersion, tensile, elongation
Permits heavier loadings, increases tackiness. For Tires, Tubes, Mechanicals Reclaims.
E. W. Colledge, G.S.A., Inc.
New York Cleveland Chicago
San Francisco Jacksonville

ZINC OXIDE PIGMENTS
The XX Reds Kadox
ZINC SULPHIDE PIGMENTS
"Albalith"—super lithopone
Cryptone—high zinc sulphide pigment
XX Zinc Sulphide
The New Jersey Zinc Sales Co.
New York Cleveland San Francisco Chicago

IRON OXIDES
Asbestine—Barytes—Talc—Soapstone
C. K. Williams & Co.
EASTON, PA.

SOFTENERS—Fluxrite
We are specialists in softeners and invite your investigation.
Damascus Manufacturing Co.
Cleveland, Ohio

ZINC OXIDES
Black Label Red Label
Manufactured by Our New Electrothermic Process
St. Joseph Lead Co.
250 Park Ave., New York
Oliver Bldg., Pittsburgh, Pa.
Plant and Laboratory: Josephtown, Pa.

MANY BIG advertisers started with little space. Spaces in this section are small in size but big in returns. Try one.

STEARIC ACID
STEAREX . . . CAKE or POWDER
STEAREX FLAKE
Standardized Products for Rubber Compounding
MINERAL RUBBER (Parmr) TALC
SOAPSTONE, CHINA CLAY
Binney & Smith Co.
41 East 42nd St., New York City

Where Can I Get . . . ?
When the product sought is one you manufacture, the Buyer should be able to find it in this section. Is Yours Listed Here?

A Section Devoted to Listings of Leading Producers and Distributors of Raw Materials, Machinery and Equipment, and Supplies for the Rubber Industry.

The Market Place

Chemicals and Compounding Materials — Machinery and Equipment—Crude, Reclaimed and Scrap Rubber—Fabrics—Rubber Products — Consulting Engineers.

Machinery and Equipment

BIAS CUTTER
Cuts cord or flat woven fabrics with equal ease and precision. In use all over the world.
Spadone Machine Co., Inc.
15 Park Row New York

CALENDERS— EMBOSSING
For artificial leather, oil cloth, etc.
Textile-Finishing Machinery Co.
83 Exchange Pl., Providence R. I.

CALENDER SHELLS
For all purposes—Super, Heavy Duty and Standard—Also
ALL-METAL STOCK BOOKS
Light—Strong—Smooth
The W. F. GAMMETER CO.
Cadiz Ohio

ENGINEERS
Machinists, Iron and Steel Founders
Standard and Special
Rubber Working Machinery
The Adamson Machine Co.
Akron, Ohio

LABORATORY Apparatus
Bierer-Davis Aging Apparatus; Emerson Water Bath; Rubber Buffing Machine; Emerson Fuel Calorimeter; Emerson Textile Conditioning Ovens.
Emerson Apparatus Co.
Melrose, Mass.

MACHINERY—RUBBER
"MASTER" Tube Molds, Tire Vulcanizers, Molds and Cores, Tire Drums, Tubers, etc.
Special Machinery Built to Order
Akron Standard Mold Co.
Akron, Ohio

MACHINERY—RUBBER
Spreaders (Coating Machines), Doublers, Cement churns, Power Transmission Machinery.
American Tool & Machine Co.
Hyde Park, Boston, Mass.

MACHINERY — RUBBER
Hydraulic Presses—Tubers
Strainers—Mills—Refiners
Erie Foundry Company
ERIE, PA.

MACHINERY—
Adhesive Mixers and Spreaders.
Presses—Hydraulic and Screw.
Power Pumps—Vertical and Horizontal.
Automatic Pressure Regulators.
Special Hydraulic Valves.
Chas. E. Francis Co.
RUSHVILLE, IND.

MACHINERY—
Tubing, Straining and Insulating Machines
Heater Presses and Platen Presses
Complete Line of Rubber Machinery
National-Erie Company
(Williams Foundry and Machine Division)
ERIE, PA.

MANDRELS—All Types
Circular and Straight—Aluminum and Steel
For Inner Tubes, Hose, Jar Rings, etc.
Sherardizing and Chrome Plating
Machinery—Air Bag & Mandrel Polishing
National Sherardizing & Machine Co.
Hartford, Conn. Akron, Ohio

In this section are listed the products of the leading producers of materials and equipment used by rubber manufacturers.

When buyers refer to these pages for their needs, your name and address and a description of your products should be available here. The cost of a one-inch listing is only $5.00 per issue—the lowest cost of advertising space available in the rubber field.

THE RUBBER AGE
250 West 57th St., New York

MOLDS AND CORES—
Tire building equipment; general machine work.
Flynn Shape C Tube Molds
The Akron Equipment Co.
Akron, Ohio

MOLDS AND CORES—
Also Non-Skid Engraving Machines. Licensees for Watch-case Heaters and India Cores & Chucks.
The Franz Foundry & Machine Co.
Akron, Ohio

PYROMETERS—
Surface Pyrometers for Rolls and Calenders—Mold Pyrometers for Interior or Exterior Surfaces.
Quick and Accurate Temperatures Obtained with Cambridge Pyrometers
Cambridge Instrument Co., Inc.
3732 Grand Central Terminal, N. Y. City

STOCK SHELLS
A Type for Every Need—Large Diameter—Light Weight—Extra Strong—Seamless.
National Sherardizing & Machine Co.
Hartford, Conn. Akron, Ohio

TESTING MACHINES
RUBBER TENSILE TEST MACHINES
TEXTILE TESTING MACHINES
Write for Descriptive Literature
Henry L. Scott Co.
P. O. Box 963 Providence, R. I.

TUBING, INSULATING and Straining Machinery
"Perfected" equipment for inner tubes, treads, and tire beads. Circular hose looms.
John Royle & Sons
Paterson, New Jersey

USED MACHINERY
We have on hand, ready for prompt shipment, guaranteed machinery for every branch of the rubber trade.
L. Albert & Son
Trenton, N. J. Akron, O.

THE MARKET PLACE Section Continued on Next Page

A Section Devoted to Listings of Leading Producers and Distributors of Raw Materials, Machinery and Equipment, and Supplies for the Rubber Industry.

The Market Place

Chemicals and Compounding Materials — Machinery and Equipment—Crude, Reclaimed and Scrap Rubber—Fabrics—Rubber Products — Consulting Engineers.

Rubber — Crude, Scrap, Reclaimed, Latex

CRUDE RUBBER
Scrap Rubber, Hard Rubber Dust
We Solicit Your Inquiries
H. Muehlstein & Co., Inc.
41 East 42nd St. New York City
Offices in Akron, Chicago, Boston

RECLAIMED RUBBER—
Uniformity, reliability, cleanliness
Pequanoc Rubber Co.
Butler, N. J.

REVERTEX
Highly Concentrated (About 73%)
RUBBER LATEX
Sole Distributors for U. S. A. and Canada
Revertex Corp. of America
40 Rector St., New York, N. Y.

CRUDE RUBBER
LIQUID LATEX
Members Rubber Exchange of N. Y., Inc., and Rubber Exchange Clearing House, Inc.
Charles T. Wilson Co., Inc.
99 Wall St. New York
AKRON OFFICE: 507 Second Natl. Bldg.

RECLAIMED RUBBER—
of Standardized Quality
Philadelphia Rubber Works Co.
New York Akron

RUBBER LATEX
Normal, Concentrated and Processed for All Requirements
Heveatex Corporation
67 Maplewood St., Malden, Mass.
Offices in New York, Akron, Chicago

GUAYULE— "Duro" Brand washed and dried ready for compounding.
Continental Rubber Co.
1775 Broadway New York

RECLAIMED RUBBER—
A standardized grade for every requirement.
U. S. Rubber Reclaiming Co.,Inc.
230 Park Ave. New York, N. Y.
"49 Years Serving the Industry Solely as Reclaimers"

RUBBER SCRAP
Always Buying and Selling
Rubber Waste, Cured and Uncured. Hard Rubber, Balata, Gutta Percha.
HERMANN WEBER
Newark & Jackson Sts., Hoboken, N. J.

RECLAIMED RUBBER—
For All Purposes
Naugatuck Chemical Co.
1790 Broadway, N. Y. City

RECLAIMED RUBBER—
Prompt, efficient handling of orders—Technical assistance—stability of supply—250,000 lbs. daily capacity.
XYLOS RUBBER CO.
Akron, Ohio. Los Angeles, Cal.

SCRAP RUBBER
Let us have your inquiries—we buy and sell all grades of Scrap Rubber.
Chalfin Rubber Trading Co., Inc.
274 Madison Ave., New York City

Miscellaneous — Consultants, Milling, Liners, Special Products, Manufactured Rubber Goods

CHEMIST, Consulting—
Testing, formulae, costs, experimental work on all classes of rubber products.
Fred'k. J. Maywald, F.C.S.
301 Hoboken Rd., Cor. 10th St., Carlstadt, N. J.

MECHANICAL MOLDED RUBBER GOODS
Your Inquiries Solicited
Barr Rubber Products Co.
Sandusky, Ohio

SANITARY GOODS—
Dress Shields, Baby Pants, Aprons, Elastic Belts, Bloomers, Stepins, Bibs, Guimps and Brassieres.
SPECIAL GOODS CUT TO ORDER
Rand Rubber Co., Inc.
Sumner Ave. & Halsey St., Brooklyn, N. Y.

CONSULTING
Rubber Technologist
R. R. Olin Laboratories
P. O. BOX 372, AKRON, OHIO
Telephones: Sherwood 3724, Franklin 8551

MILLING for the Trade
Let us bid on your milling, calendering or spreading jobs
Special Compounds Developed
Rubber & Asbestos Corporation
26-38 Cornelison Ave., Jersey City, N. J.

TIRE VALVES
Valve Insides, Tire Gauges, etc.
Satisfy Requirements for Every Purpose
A. Schrader's Sons, Inc.
Brooklyn Chicago Toronto London

LINERS—PROCESSED
For Various Rubber Stocks
The Cleveland Liner & Mfg. Co.
5508 Maurice Ave., Cleveland, O.

RUBBER-ON-METAL
Processes—Products
Edward S. Avery
1130 Park Ave., New York City

TIRES
'Goes a long way to make friends'
General Tire & Rubber Co.
Akron Ohio

PEQUANOC STANDARDS

RECLAIMED RUBBER

UNIFORMITY SERVICE

PEQUANOC RUBBER CO.

BUTLER, NEW JERSEY

ROBERT KNOBLOCK
Midwestern Representative
2301 Lincoln Way West
Mishawaka, Ind.

INDEX TO ADVERTISERS

Adamson Machine Co. 547
Akron Equipment Co. 547
Akron Standard Mold Co. 547
Albert & Son, L. 547
Aluminum Flake Co. 520, 545
American Cyanamid Co. 546
American Tool & Machine Co. 547
Anaconda Zinc Oxide Dept. of I. L. R. Co. 516, 546
Anderson-Prichard Oil Corp. 546
Ansbacher-Siegle Corp. 520, 545
Avery, Edward S. 548

Barr Products Co. 548
Barrett Co., The 519, 545
Binney & Smith Co. ..... Back Cover, 545, 546

Cabot, Inc., Godfrey L. 545
Cambridge Instrument Co. 547
Carter Bell Manufacturing Co., The 550, 546
Chalfin Rubber Trading Co., Inc. 548
Cleveland Liner & Mfg. Co. 548
Continental Rubber Co. 548
Colledge, E. W., G. S. A., Inc. 546
Cooper, Wm., & Nephews 545

Damascus Manufacturing Corp. 546
du Pont de Nemours & Co., E. I. 515, 546

Emerson Apparatus Co. 547
Erie Foundry Co. 547

Francis, Chas. E., Co. 547
Franz Foundry & Machine Co. 547

Gammeter, W. F., Co. 550, 547
General Atlas Carbon Co. 546
General Tire & Rubber Co. 548
Governor Clinton Hotel 550
Gross, A., & Co. 546

Hall Co., The C. P. 546
Hammill & Gillespie, Inc. 546
Hevеatex Corporation 519, 545, 548
Huber, J. M., Inc. 514, 545

Imperial Oil & Gas Products Co. 545
International Pulp Co. 542, 545

Maywald, Fredk. J. 542, 548
McNulty, Joseph A. 546
Montgomery, W. L., & Co. 546
Moore & Munger 545
Muehlstein & Co., Inc., H. 520, 548

National Aniline & Chemical Co. 545
National-Erie Co. 547
National Sherardizing & Machine Co. 547
Naugatuck Chemical Co. 524, 548
New Jersey Zinc Co. 521, 546

Olin Laboratories, The R. R. 542, 548

Pequanoc Rubber Co. 549, 548
Philadelphia Rubber Works Co. 548

Rand Rubber Co. 550, 548
Rare Metal Products Co. 545
Revertex Corp. of America 548
Royle & Sons, John 547
Rubber & Asbestos Corp. 548
Rubber Service Laboratories Co., The 545

Schrader's Sons, Inc., A. 548
Scott Co., Henry L. 547
Southwark Mfg. Co. 546
Spadone Machine Co. 547
Stamford Rubber Supply Co. 550, 546
St. Joseph Lead Co. 546
St. Louis Sulphur and Chemical Co. 546

Textile Finishing Machine Co., The 550, 547

United Carbon Co. 517, 545
U. S. Rubber Reclaiming Co. 523, 548

Vanderbilt, R. T., Co. ..... Front Cover, 545

Weber, Hermann 548
Whittaker, Clark & Daniels, Inc. 550, 545
Williams, C. K., & Co. 550, 546
Wilson Co., C. T. 548
Wishnick Tumpeer, Inc. 545

Xylos Rubber Co. 518, 548

CLASSIFIED ADVERTISING—542

Excessive acid, alkali, copper, manganese or soluble salts, present in many ordinary pure iron oxides, seriously affect the stability of rubber compounds in which they are used.

IN

RUB-ER-RED

(Copyright 1930 by C. K. Williams & Co.)

these troublesome elements are eliminated or reduced to an absolute minimum—safely below the percentages allowed in any known rubber specifications.

Ferric Oxide 99%—Spec. Gravity 5.15

We are glad to send samples and complete analysis.

C. K. Williams & Co. Easton, Pa.

George S. Mepham & Co. East St. Louis, Ill.

EMBOSSING CALENDERS

For Artificial Leather, Oil Cloth, Carriage and Automobile Covers

DRYING MACHINES

with Copper or tinned iron Cylinders for Cotton Ducks, Drills and Sheetings

The Textile-Finishing Machinery Co.

OFFICE, No. 83 EXCHANGE PLACE

PROVIDENCE, R. I.

FACTICE GIVES

That Velvet Feel to Rubber

The STAMFORD RUBBER SUPPLY COMPANY

STAMFORD, CONN.

1880 **Rand** 1932

RUBBER GOODS

"They Last Longer"

DRESS SHIELDS
DRESS SHIELD LININGS
BABY PANTS
CRIB SHEETS
RUBBERIZED SHEETING
BABY BIBS
HOUSEHOLD APRONS
SANITARY BELTS
APRONS—BLOOMERS
SKIRTS—STEPINS
CHILDREN'S APRONS

SHEETED RUBBER—PLAIN & RANDPRINT—For Manufacturers

RAND RUBBER CO. Brooklyn, N. Y.

WHITTAKER

ESTABLISHED 1890

Standard for 42 years

MINERALS-COLORS CHEMICALS

Whittaker, Clark & Daniels, Inc.

IMPORTERS—MANUFACTURERS—EXPORTERS

245 FRONT ST. NEW YORK CITY

Often Imitated—Never Duplicated

GAMMETER'S

Super, Heavy Duty and Standard CALENDER SHELLS

and

Gammeter's All-Metal Stock Books

The W. F. Gammeter Company

Cadiz - - - Ohio

The CARTER BELL MFG CO

CARTER BELL STANDARD SINCE 1903 RUBBER SUBSTITUTES

150 Nassau Street New York

In New York

The HOTEL GOVERNOR CLINTON

Opposite Penn. R. R. Station

New York's new hotel truly expressive of the greatest city. 1200 pleasant rooms each with Servidor, bath, circulating ice water and radio provisions.

ROOMS $3.00 UP

31ST STREET 7TH AVENUE